MONITORING CONCEPTS

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INTRODUCTION

- The development of irrigation in the country has received priority in the overall planning.
- Consumed bulk of the investment under the public sector.
- Water is a state subject and all irrigation schemes are being planned and executed by the State Governments.
- The central assistance is provided to the states in the form of loans and grants.
- Continuous slippages in completion of irrigation projects.
- Resultant shortfall in achieving the targeted irrigation potential
- Ultimate irrigation potential of 140 mha. Reported cumulative irrigation potential created up to 2004-05 is around 105 mha.

Introduction -Continued

- Large number of major and medium irrigation projects in the country are still languishing due to various reasons.

- The number of projects likely to be spilled over into the XII Plan works out to 337 including 155 major, 147 medium and 35 ERM projects.

- Major constraint in desired progress in execution is paucity of funds.

THE MAJOR CAUSES FOR NOT ACHIEVING THE TARGETED POTENTIAL

- Delay in initial start of the projects
- Frequent changes in scope of the projects
- Shortage of essential construction materials
- Inadequate funding
- Land acquisition
- Non-transfer of forest land
- Delay in decision making on contracts
- Delay in procurement of construction equipment, spare parts
- Delay for R&R Problems of PAFs
- Poor coordination amongst various implementation agencies

NEED FOR MONITORING

- To keep close watch on project implementation
- To complete them in a time bound manner
- To achieve targets of creation of irrigation potential
- First and second state irrigation ministers' conference held in 1975 and 1976
- A need to exercise more control over the implementation of the irrigation projects
- A 3 tier system of monitoring of major and medium irrigation projects at project, state and central levels was recommended
- At central level, this work was entrusted to Central Water Commission

SCOPE OF MONITORING ENLARGED

Additional Functions:

- Review of states' annual plans.
- CWC's participation in the working group discussions in the Planning Commission.
- Preparation of annual review reports of the monitored projects on physical and financial status.
- Annual report on irrigation development from major and medium projects in each state.
- In 1986-87, the projects receiving external assistance and inter-state projects were also included in the ambit of monitoring.
- Project monitoring by CWC was made a plan activity in VIII Plan w.e.f. 1995-96

MONITORING OBJECTIVES

- Ensuring detailed and integrated construction planning of the project.
- Collection of information regarding progress of execution.
- Comparison of past and anticipated future progress with targets and plans both on physical and financial side.
- Identification of deviations, shortfalls, lagging areas

MONITORING OBJECTIVES--continued

- Initiating corrective actions for overcoming the difficulties and problem areas so as to achieve targets; modifying targets and wherever necessary, to be realistic.
- Ensuring that corrective action is taken; reviewing its effect, carrying out any modifications in the action which may be needed.
- Building a progress data bank for future use.
- Sending necessary monitoring information to the concerned authorities and inter-related projects.

USEFULNESS OF PROJECT MONITORING BY CWC

- A useful management tool for ensuring timely completion of irrigation projects.
- Monitoring at central level by CWC is effective in achieving physical and financial targets.
- The minimum need of the construction monitoring for speedy completion of the projects is being taken care of by the monitoring units set up in CWC.
- MoWR & CWC do have with them the first hand information about the status of all the projects and overall picture of the sector.
- Monitoring of " AIBP" for providing central assistance to needy projects has been possible through the network of CWC monitoring units.

FUNCTIONS OF HQ MONITORING DIRECTORATE OF CWC

- Monitoring visits to the projects for on-the-spot study of progress of works.
- Critical monitoring of potential targets and utilization during the construction period.
- Monitoring of activities related to R&R programme and progress and environment safeguards.
- Construction programme for total implementation of the projects
- Feed-back information on Annual Construction Programme in the form of QPRs
- Review of Annual Plan and Five Year Plan proposals for major and medium sector of the State and participation in Annual Plan discussions in the Ministry of Water Resources and Planning Commission

FUNCTIONS OF FIELD MONITORING DIRECTORATES OF CWC

- Critical monitoring of potential targets and utilization
- Construction programme for total implementation of the projects.
- Feed-back to monitoring unit at HQs about the Status of the projects.
- Monitoring of AIBP Projects and preparation of AIBP Status Reports.

ACCELERATED IRRIGATION BENEFIT PROGRAMME (AIBP)

- A large number of river valley projects, both multipurpose and irrigation have spilled over from Plan to Plan mainly because of financial constraints.
- Despite a huge investment having already been made on these projects, the country is not able to derive the desired benefits.
- There were 171 Major, 259 Medium and 72 ERM on-going Irrigation projects in the country at various stages of construction at the end of VIII Plan (i.e. end of March'1997) with spill over cost of Rs. 75690 Cr.
- A matter of grave concern for the Union Government and remedial measures for expeditious completion of some of the projects which were in advanced stage of completion became necessary

ACCELERATED IRRIGATION BENEFIT PROGRAMME AIBP-continued

- Central Government, during 1996-97, launched the Accelerated Irrigation Benefit Programme (AIBP) to provide Central Loan Assistance (CLA) to approved major/medium irrigation projects in the country.
- Objective was to accelerate the implementation of those projects which were beyond resource capability of the States or were in advance stage of completion.
- Subsequently the programme was also extended to minor surface irrigation projects and ERM Projects satisfying some specified conditions.
- Since its formulation, the terms of the programme have been widened and liberalized over the time.

EVOLUTION OF AIBP GUIDELINES

1996

- For AIBP component of Rs.800/- Cr., the project cost should be Rs.1000/- Cr, substantial progress achieved, and beyond resources capabilities of the States.
- For AIBP component of Rs.100/- Cr, the project should be in advance stage of completion and farmers could get benefit of assured water supply to 1,00,000 ha.
- Loan @ 13% interest for 1996-97 and thereafter as prescribed by Finance Ministry, repayable in 20 equal installments
- 50% of loan will enjoy 5 years grace period

EVOLUTION OF AIBP GUIDELINES

1st February'2002

- Only major/medium irrigation projects in advance stage of completion and could be completed in next four agricultural seasons i.e. in two years.
- Surface Minor Irrigation Scheme in special category states. Major & Medium schemes in KBK districts of Orissa in initial stage of construction will be considered.
- Project benefiting tribal/drought areas would be given preference.
- Priority to Inter-State projects.
- CLA will be released on yearly basis in two installments.
- State Govt. should confirm provision of required budget outlay.
- Loan repayable in 20 equal installments. 50% of loan will enjoy 5 years grace period.

EVOLUTION OF AIBP GUIDELINES

1st February'2002

- CLA in the ratio 4:1(Center : State) for reforming states in general category (*Recover full O&M cost of Irrigation projects in 5 years).* Reforming states in special category regions to get full Central assistance without state's share.
- Undertaking for rationalization of water rates.
- For non-reforming states, CLA would be 2:1 (Center : State) for general category and 3:1 for special category.
- 2nd installment of CLA to be released after 70% expenditure of 1st installment.
- Up to 15% of CLA to meet establishment expenditure to be adjusted against state's share.

EVOLUTION OF AIBP GUIDELINES

1st February'2002

FAST TRACK PROGRAMME

- Only approved major & medium irrigation projects which can be completed in one year (two working seasons).
- Fully funded by Central Govt. by providing 100% loan.
- State Govt. should confirm full budget outlay in state plan.
- Establishment expenditure to be borne by State.
- The releases will be made in two installments of 50% each.

EVOLUTION OF AIBP GUIDELINES

1st April'2004

- Only major/medium irrigation projects in advance stage of completion and could be completed in next 6-8 working seasons i.e. in 3-4 years.
- Major & Medium schemes in KBK districts of Orissa in initial stage of construction will be considered.
- State Govt. to sign MoU for each individual project.
- Project benefiting tribal/drought areas would be given preference.
- Priority to Inter-State projects.
- Loan in the ratio of 2:1(Center : State) for general category states and 3:1 for special category states.
- For timely completion of projects as per MoU, loan to be converted in 30% grant & 70% loan for general category and 90% grant & 10% loan for special category states.

EVOLUTION OF AIBP GUIDELINES

1st April'2004

- **FAST TRACK PROGRAMME**

- Only approved major & medium irrigation projects which can be completed in three working seasons
- Fully funded by Central Govt. by providing 30% grant & 70 % loan for general category and 90% grant and 10 % loan for special category states
- State Govt. should confirm full budget outlay in state plan
- Establishment expenditure to be borne by State
- The releases will be made in two installments of 50% each

EVOLUTION OF AIBP GUIDELINES

1st April'2005

Only major/medium Irrigation projects in advance stage of completion and could be completed in next 4 financial years.

- Major & Medium schemes in KBK districts of Orissa in initial stage of construction will be considered.
- ERM projects included (10% of AIBP funds may be allotted).
- State Govt. to sign MoU for each individual project.
- Project benefiting tribal/drought areas would be given preference.
- Priority to Inter-State projects.
- Loan in the ratio of 2:1(Center : State) for general category states and 3:1 for special category states.
- 30% grant & 70% loan for general category and 90% grant & 10% loan for special category states.
- Loan component from market by states and Grant by GoI
- For Reforming states, 4:1:: C:S for general category and 1:0 for special category.

EVOLUTION OF AIBP GUIDELINES

1st April'2005

FAST TRACK PROGRAMME

Only approved major & medium irrigation projects which can be completed in next two financial years.

- Fully funded by Central Govt. on pattern of 1:0, grant component by Central Govt. and loan component from market by States.
- Establishment expenditure to be born by State.
- The releases will be made in two installments of 50% each

EVOLUTION OF AIBP GUIDELINES

December' 2006

Only major, medium, ERM irrigation projects in advance stage of completion and could be completed in next 4 financial years.

- State Govt. to sign MoU for each individual project.
- New additional Projects benefiting tribal/drought areas, under PM's package would be included.
- Surface Minor Irrigation Schemes from North-East, Hilly States and KBK districts.
- 25% grant for general category and 90% grant for special category states and drought prone, flood prone and tribal areas.
- Fast Track programme is withdrawn.

AIBP

- The State Governments have been provided an amount of Rs. 60254.82 cr. as CLA/Grant under AIBP since inception of this programme till March’2013 for 293 major/medium irrigation projects and 11655 Surface minor irrigation schemes
- After commencement of this Programme 129 major/medium projects and 7969 Surface MI Schemes have so far been reported completed
- An additional irrigation potential of 59.39 lakh ha has been created up to March 2009.

With effect from October'2013, following are terms of funding under AIBP

- The cost at the time of inclusion of any new project in the scheme of AIBP will be frozen for the purpose of working out the quantum of central assistance, with the States being at liberty to fund the project from their own resources after the stipulated date of completion.
- The stipulated date of completion will be four years starting from the financial year of first release of Central Assistance and excluding year of inclusion.
- The projects which are not going as per schedule, time extension of maximum two years and escalation of cost by maximum 20% may be allowed based on justifications provided by the State with the approval of Secretary, Ministry of Water Resources.
- The central assistance (CA) will be in the form of central grant.

With effect from October'2013, following are terms of funding under AIBP (contd.)

(a) On-going and new projects benefiting the non-Special Category States may continue to be provided Central Assistance at 25% of the cost apportionable to irrigation and drinking water components. However, the quantum of Central Assistance could be enhanced upto 50% as an incentive for new projects subject to the condition that the States actually carry out water sector reforms as per the reform benchmarks to be laid down by the Ministry of Water Resources in due course.

(b) For ongoing projects in Special areas of Non-special Category States, the Central Assistance under AIBP will be 75% of the cost of the project (work component) for eligible irrigation projects

(c) For new projects in Special areas of Non-special Category States, the Central Assistance under AIBP will be 75% of the cost of the project (work component) for eligible irrigation projects

With effect from October'2013, following are terms of funding under AIBP (contd.)

(d) Ongoing projects and the surface Minor Irrigation schemes benefiting Special Category States (including MI schemes of KBK region of Orissa) may continue to be eligible for 90% Central Assistance.

(e) For new projects in Special category States, the Central Assistance under AIBP will be 90% of the cost of the project (work component) for eligible Irrigation projects.

(f) For the purpose of determining the quantum of assistance, a project benefiting Desert Development Programme (DDP) area/Desert Prone Area will be treated on a par with those benefiting DPAP areas and the new projects will be eligible for Central Assistance @ 90% for projects in Special Category States, while it will be 75% for projects in Non-Special Category States. The DDP areas will be as identified by the Ministry of Rural Development in their published documents. The ongoing projects already under AIBP and benefiting Desert Development Programme (DDP) /Desert Prone Area will continue to get Central Assistance @ 25%

AIBP

- As per the prevailing AIBP guidelines, projects benefiting drought prone/tribal area, projects included in the Prime Minister's relief package for agrarian distress districts of Maharashtra, Karnataka, Andhra Pradesh and Kerala and projects in the States having irrigation development below national average could be included in AIBP in relaxation to one to one criteria of inclusion of new project under AIBP
- Of the 65 major/medium projects initially included in the Prime Minister's relief package for agrarian distressed districts of Andhra Pradesh, Karnataka, Kerala and Maharashtra, so far 40 projects have been funded under AIBP. The grant released so far for these projects is Rs.5155.13 Cr.

MODE OF DISBURSEMENT

- The central assistance (CA) would be released in the following manner:

(a) For projects receiving central assistance @ 25% and upto 50% of project cost, the 90% of CA to be released after release of at least 50% share of the State;

(b) For projects receiving assistance higher than 50%, the 50% of CA to be released after the State releases its full share;

(c) Balance/Second installment of CA to be released after obtaining UC of minimum of 50% of CA released earlier;

(d) Next year installment to be released after obtaining 100% utilization of funds released in the previous year(s).

MONITORING OF PROJECTS UNDER AIBP

1 By State Governments:

- The quarterly monitoring report on Physical and financial component wise (including CAD component) progress should reach to Chief Engineer (PMO) and Chief Engineer (CE) of the concerned field office of CWC.
- At the end of each year and on completion of the project, paper print of Satellite imagery clearly indicating the project components should reach to Chief Engineer (PMO), CWC and to concerned regional CWC Chief Engineer's office.
- Project level and State level Monitoring committee for environment safe guard implementation to be activated immediately for the project under AIBP.

MONITORING OF PROJECTS UNDER AIBP

1 **By State Governments:** (contd.)

State Government is to submit a Quality Assurance report certifying that "All mandatory quality checks prescribed for construction material, construction procedure both in number and frequency has been carried out and all the results are within prescribed limits.

- The quality of works constructed and under construction is of good quality. Payments to contractors have been released based on Quality work.
- The mandatory inspections required by supervisory staff of all quality control labs is being carried out."
- For monitoring of the distribution network related works, a list of all the major structures, outlets to be covered in the year concerned and rail/ road crossings/ utility crossings should be defined as targets and monitored for their achievement.

MONITORING OF PROJECTS UNDER AIBP

2 At central Level

- All major and medium projects where funds have been released in the previous year are to be monitored once in a year by concerned field office of CWC. The CWC (HQ) will monitor inter-state projects.
- A checklist for status of outlets after each visit will be required to be attached with the monitoring report.
- CWC may check at least 10% of the total outlets completed.
- Targets of monitoring by field offices of CWC will be fixed with the approval of MoWR.

Monitoring of Minor irrigation projects

1 Monitoring of the minor irrigation schemes has to be done by the State Government based on Geographic Information System (GIS) maps and each Minor Irrigation Schemes to be given a unique Identification Code (U.I.C). Monitoring will be done through agencies independent of construction agencies.

2 These schemes would also be monitored periodically on sample basis (at least 5% of MI Schemes) by the concerned regional Offices of Central Water Commission and will be assessed against predetermined targets set by the Ministry of Water Resources.

3 Evaluation will be carried out for completed MI schemes by the State Government through independent agency.

Monitoring of CAD works will be carried out by monitoring visit of CAD group of MoWR at least once a year wherever CADWM funding is going on.

GUIDE LINES FOR PREPARATION OF STATUS REPORT

- **EXECUTIVE SUMMARY**
- Project in brief
- Organizational & Management aspects
- Physical progress
- Financial Progress
- Issues in Focus

GUIDE LINES FOR PREPARATION OF STATUS REPORT

STATUS REPORT

- Project components as being executed
- Change in scope, if any
- Organizational set up for the project
- Contractual arrangements
- Quality assessment
- Land acquisition, Resettlement & Rehabilitation
- Environment clearance
- Estimated cost
- Techno-Economic Appraisal
- External assistance

GUIDE LINES FOR PREPARATION OF STATUS REPORT

- Physical Programme & progress of different components of the project
  - Head Works
  - Main Canals
  - Branch Canals
  - Distributaries & Minors
  - Water Courses

GUIDE LINES FOR PREPARATION OF STATUS REPORT

- Project potential
- Financial programme and progress
- Financial Management
- Monitoring of project at state/project level
- Points needing attention
- **ANNEXURES**
- **PLATES**

NATIONAL PROJECT FOR REPAIR, RENOVATION & RESTORATION OF WATER BODIES

DIRECTLY LINKED TO AGRICULTURE

BACKGROUND

- There are about five lakh water bodies/tanks used for irrigation
- Loss of storage due to silting of the tanks, poor maintenance and management, encroachment etc.
- To restore the storage capacity of water bodies with the purpose of recovering their lost irrigation potential
- A pilot scheme approved by Government of India in January' 2005
-

NATIONAL PROJECT FOR REPAIR, RENOVATION & RESTORATION OF WATER BODIES DIRECTLY LINKED TO AGRICULTURE

Objectives of the scheme:

i) Comprehensive improvement and restoration of water bodies thereby increasing tank storage capacity.

(ii) Ground Water Recharge.

(iii) Increased availability of drinking water.

(iv) Improvement in agriculture/horticulture productivity.

(v) Improvement of catchment areas of tank commands.

(vi) Environmental benefits through improved water use efficiency; by promotion of conjunctive use of surface and ground water.

(vii) Community participation and self-supporting system for sustainable management for each water body.

(viii) Capacity Building of communities, in better water management.

(ix) Development of tourism, cultural activities etc.

NATIONAL PROJECT FOR REPAIR, RENOVATION & RESTORATION OF WATER BODIES DIRECTLY LINKED TO AGRICULTURE

1. The central assistance will be in the form of grant which will be 90% of project cost in case of Special Category States (North-Eastern States including Sikkim, Himachal Pradesh, Jammu & Kashmir, Uttarakhand and undivided Koraput, Bolangir and Kalahandi (KBK districts of Orissa) as well as projects lying in desert development programme(DDP),drought prone area/tribal area/Naxal affected area and Central assistance of 25% of project cost in case of Non-Special Category States/areas.
2. The balance cost of the project as State share (10% in case of Special Category States/areas and 75% in case of Non-Special Category States/ areas) is to be arranged by the State Governments themselves.

- The projects are to be completed within a period of two years

NATIONAL PROJECT FOR REPAIR, RENOVATION & RESTORATION OF WATER BODIES DIRECTLY LINKED TO AGRICULTURE

THE SCHEME

- Repair of related structures like check dams, weirs, bunds, and water conveyance systems
- Not more than 50% of a given project cost is earmarked for ancillary works for conveyance system
- DPR shall not include works for incomplete minor irrigation schemes or schemes completed within the last 10 years

NATIONAL PROJECT FOR REPAIR, RENOVATION & RESTORATION OF WATER BODIES DIRECTLY LINKED TO AGRICULTURE

DISTINCTIVE FEATURES OF THE SCHEME

Active community participation for implementation of the projects

- A district level implementation committee chaired by the District Collector
- Active involvement of the Panchayati Raj Institutions and Water Users Associations and representative of all stakeholders.
- The main thrust of the projects will be for increase in storage capacity of the water bodies

NATIONAL PROJECT FOR REPAIR, RENOVATION & RESTORATION OF WATER BODIES DIRECTLY LINKED TO AGRICULTURE

DISTINCTIVE FEATURES OF THE SCHEME

- Priority to be accorded by states to areas which are arid drought-prone, tribal-dominated, backward while selecting districts
- 10% of the project cost will be kept for related capacity building & people's participation and survey for collection of baseline data
- Funds upto 15% of project cost can be utilised for Catchment area treatment
- Handing over of the project to WUA/Panchayat on completion for operation and maintenance

NATIONAL PROJECT FOR REPAIR, RENOVATION & RESTORATION OF WATER BODIES DIRECTLY LINKED TO AGRICULTURE

DISTINCTIVE FEATURES OF THE SCHEME

- Deciding provision for O&M funds for WUA/Panchayat during the project implementation period.
- Water Users Associations (WUAs), Panchayats and NGOs and all stake holders will be involved in overall supervision for quality of works, procurement and general monitoring of the project works.
- Funds to be spent from separate project account upon authorization by Chairman, DLIC as per recommendation of DLIC

RRR

- Under the scheme, about 10,000 water bodies having a Culturable Command Area (CCA) of 6.235 lakh hectare at a cost of Rs. 10,000 Cr. would be covered. Out of 10,000 water bodies, 9,000 water bodies will be in rural areas and balance 1,000 water bodies will be in urban areas.
- Out of Rs. 10,000 Cr., central share is Rs. 6235 Cr. which includes Rs. 250 Cr. for spill over works in respect of water bodies taken up during XI Plan.
- The remaining amount of Rs. 3765 Cr. is to be arranged by State Governments themselves.
- The States would also be encouraged to seek external assistance for funding of RRR of Water Bodies.

Implementation of the Scheme RRR

- **The Institutional structure proposed is:**

(i) **Water Users' Association (WUA) at the Gram Panchayat Level**: At the water body level, the Detailed Project Reports (DPRs) would be prepared and works would be implemented by Water Users ' Association (WUA) / Local Panchayat /A government agency identified by the District Level Implementing Agency (DLIA).

(ii) **Arrangements at District Level :** The proposals identified / received by DLIA would be scrutinised / included in the District Plan and forwarded to State Level Nodal Agency (SLNA) for putting up to State Technical Advisory Committee (TAC).

Implementation of the Scheme RRR

(iii) **Arrangements at State Level:** A State Level Nodal Agency (SLNA) will be identified by the State Government which will be responsible to plan various activities envisaged under the scheme and monitor their implementation.

- A Technical Advisory Committee (TAC) will be constituted by the State to techno- economically appraise and approve the DPR.
- TAC shall also include representative from Central Water Commission (CWC) and Central Ground Water Board (CGWB).
- After approval of the DPR by the State TAC, the State will submit the DPR to the concerned Regional / Field Office of CWC. The concurrent evaluation at the time of implementation would be got done by State Governments themselves.

Implementation of the Scheme RRR

(iv) **Arrangements at Central Level**

- The MoWR will coordinate the programme at the central level through Central Water Commission.
- The inclusion of the Water Bodies for assistance under the Scheme would be approved by the Empowered Committee of MoWR under the Chairmanship of Secretary/Special Secretary/Additional Secretary (WR).

NATIONAL PROJECT FOR REPAIR, RENOVATION & RESTORATION OF WATER BODIES DIRECTLY LINKED TO AGRICULTURE

DISTRICT LEVEL IMPLEMENTATION COMMITTEE

- Chaired by District Collector
- The Vice Chairman –NGO to be nominated by the Ministry of Water Resources, Government of India
- Executive Engineer, (in-charge of Nodal State Govt. Deptt. for Implementation)
- Member Secretary: Member Secretary to provide logistic/administrative support for day-to-day functioning

STRICT LEVEL IMPLEMENTATION COMMITTEE

Members

Representative of District Level PRI
Distt. Education Officer
Distt. Health Officer,
Distt. Agriculture Officer
District Panchayati Raj Officer
District Social Welfare Officer
District Information & Public Relations Officer,
Officer from Fisheries Deptt. and Other concerned Deptt. for the particular area.
Director, Water and Land Management Institutes for the concerned States

ISTRICT LEVEL IMPLEMENTATION COMMITTEE

Members

Officers from:

- Central Water Commission (CWC)
- Central Ground Water Board (CGWB)
- Water User Associations
- NGOs (not exceeding 3) as identified
- Head of local level Panchayats
- One member each from Women, SC/ST
- One representative from landless and other vulnerable groups

RRR - Role of the CWC / MoWR

- acilitate awareness creation about the scheme among akeholders.
- Monitor the progress under the scheme through periodic ports from the states and field visits.
- rovide general guidance to states on all matters relating to e implementation of the scheme
- onsider approval of projects received from the states for ssistance under the scheme
- et the post implementation evaluation and impact assessment f the projects done.
- rovide technical assistance to states through field offices f CGWB and CWC.
- rovide check lists for preparation of DPR and

RR - Monitoring and Evaluation

gular monitoring of the project is to be carried out at each e.

onitoring would include maintaining of both physical and ncial Progress and the outcome.

nitoring would be done with the association of the Coordination of the State Govt. and standing committee of the Panchayat at the ropriate level.

The water bodies under RRR would also be monitored odically on sample basis by Field Office of Central Water mmission.

Baseline survey would be conducted before the mencement of the project execution. Evaluation and impact essment of the scheme will be done by independent agencies to identified by the Ministry of Water Resources. Necessary

RR - Monitoring and Evaluation

The State Government shall monitor the quality of orks as per the relevant BIS codes through the ency independent of the executing agency.

Concurrent evaluation is to be done by the State overnment themselves by involving independent encies which may include IIMs and IITs.

Impact assessment can be done after completion of e scheme from the funds of CWC / MoWR.

COMMAND AREA DEVELOPMENT AND WATER MANAGEMENT PROGRAMME (CADWM)

BACKGROUND

early seventies analysis of irrigation potential created utilised revealed that there was a substantial gap ween them

e Irrigation Commission recommendations -1972 ematic development of commands of irrigation projects uld be taken up

Committee of Ministers analysed the issue and gested in 1973 - A broad based Area Development ority should be set up for every major irrigation project undertake the work of comprehensive area elopment

vernment of India initiated a Centrally Sponsored mand Area Development Programme (CADP) in

COMMAND AREA DEVELOPMENT AND WATER MANAGEMENT PROGRAMME (CADWM)

Objectives

o improve irrigation potential utilisation

ptimise agricultural production from gated land

ntegrated and coordinated approach of cient water management

COMMAND AREA DEVELOPMENT AND WATER MANAGEMENT PROGRAMME (CADWM)

mponents

onstruction of field channels and field ns.

and levelling and shaping

ealignment of field boundaries/ solidation of holdings

troduction of suitable cropping patterns

rengthening of extension services

armers' participation (w.e.f. 1.4.1996)

eclamation of waterlogged areas (w.e.f. .1996)

eview of the Programme implementation during the VIII and IX Five Year Plan

cro level distribution network for supply of water to vidual holdings had been created in about 16 million ha.

tational supply of irrigation water had been enforced in ut 11 million ha

straints

reliability of water supply at the outlet due to deficiencies in rrigation system above the outlet

sence of link and intermediate drains to let out surplus er into main drains

n-inclusion of minor irrigation projects from non- hilly areas

w priority by the State Governments to extension and ing activities.

n-revision of cost norms for various activities since VIII

estructured Programme

enamed as 'Command Area Development and Water agement Programme (CADWM Programme)' for the aining period of X Plan (2004-07) to make it more prehensive and beneficial to farmers.

ginning with 60 major and medium irrigation projects in 1974-314 projects (with total CCA of about 28.95 Mha) have been ded under the Centrally Sponsored Command Area Development ramme.

restructured CADWM programme thus, was being implemented 4 projects.

Funding Pattern

o.	Components	Cost sharing[1] between Centre and States
	Survey Planning and Design	50 : 50
	On-Farm-Development (OFD) works	50 : 50
	Construction of Field, Intermediate and Link Drains	50 : 50
	Correction of system deficiencies	50 : 50
	Reclamation of Waterlogged Areas	50 : 50
	(i) Functional grant to registered WUAs (ii) Infrastructure grant to registered WUAs	45 : 45 75 : 25
	Software components such as demonstrations including on micro-irrigation, training, monitoring & evaluation, adaptive trials	75 : 25
	One time Grant to WALMIs/ IMTIs for strengthening of infrastructure (13 Nos.)	75 : 25

Monitoring and Evaluation

- Monitoring of the projects under CAD&WM Programme is primarily the responsibility of the State Governments.
- However, MoWR and CWC will also monitor through quarterly progress reports, field visits, meetings etc.
- Remote sensing and GIS techniques can also be employed to monitor the progress on coverage of outlets having Unique Identification Number (UIN) and assess impact of the programme.
- State Governments are to use online web-based monitoring of CAD&WM Project for sending status of progress.
- Concurrent evaluation including quality control aspects by an independent agency must be done by the States.

Monitoring and Evaluation

States to constitute a multidisciplinary Committee ncluding representative of Panchayati Raj Institutions at State level (Wherever CADA Boards exist, the same can discharge the functions of State Level Monitoring Committee) with following indicative Terms of Reference:

- decide the annual work programme in such a way that ri- passu implementation takes place in the implementation in integrated and holistic manner and to advise suitably.
- review the progress of program and make suggestions for proving its performance at all levels to achieve the target.
- decide upon the evaluation studies to be taken up at the

Monitoring and Evaluation

review and recommend project proposals to be sent to the nistry of Water Resources for inclusion of project under the heme.

e committee shall include representatives from MoWR, Central ater Commission (CWC), Central Ground Water Board (CGWB), nchayati Raj Institutions (PRIs) and other members as per mposition already circulated.

te Level Monitoring Committee (SLMC)/ State Government is to sure quality control in the execution of the works and a report on the ogress of works during preceding financial year to be submitted to oWR in the Month of July-August of every financial year.

e procedure for quality control mechanism should be in place with sponsibility on correctness of data & quality of works fixed for the ficers at the level of JE/AE/EE/SE/CE. Details of quality control

NATIONAL PROJECTS

cheme for implementation during XIth plan and ontinued in XII Plan

4 projects identified as National Projects, with 0% Central Grant

nternational projects, Inter-state projects and ntra-state projects with 2,00,000 hectare ommand area with no water sharing dispute

hould be eligible for AIBP

Only major irrigation/multipurpose projects

NATIONAL PROJECTS

- 90% balance cost of irrigation & drinking water components
- 2nd installment of 10% after 80% utilization of first installment of 90%, along with state share
- Command Area Development Programme should be implemented *pari-passu* with the project
- Land records updated, livelihood survey conducted
- Soil testing and soil health cards issued to farmers

ONITORING OF NATIONAL PROJECTS

he progress of work in respect of National Projects shall be osely monitored by the Central Water Commission/Ministry of ater Resources. The monitoring of National Projects will be field sed with GIS based project implementation units linked with nagement information systems.

he State Government will keep close coordination with ricultural departments for the advanced crop planning and tension inputs to farmers of the command.

chievement of targets of the potential creation from the project ay also be got assessed by the Ministry of Water Resources rough independent agencies and other means such as remote nsing technique.

he State Government shall send quarterly physical and financial ogress reports in the proforma to the CWC/Ministry of Water sources

ONITORING OF NATIONAL PROJECTS

The State Government shall establish independent uality control organization and adequate number of uality control laboratories in the project areas to aintain quality of works. The sampling and testing will required to be carried out in accordance with relevant IS Codes

REVIEW BY STEERING COMMITTEE

he implementation of National Projects will be reviewed om time to time by the High Powered Steering ommittee constituted under chairpersonship of the ecretary (Water Resources).

VALUATION AND IMPACT ASSESSMENT

concurrent evaluation of the Project and impact sessment of the project on its completion will be nducted by the State Government through a reputed dependent organization to find out whether the visaged objectives, outcomes and targets of the project ve been achieved.

he Ministry of Water Resources may also get the valuation and impact assessment done separately.

unding for the evaluation and impact assessment will be ovided by the Ministry of Water Resources through its going Plan scheme “Research & Development ogramme for Water Sector”.

Role of Satellite Remote Sensing data in Monitoring of Irrigation Projects

ellite remote sensing is an ideal tool for mapping, inventorying and monitoring poses.

gh resolution satellite data provides excellent opportunities to capture the sting irrigation infrastructure and for monitoring the project implementation gress.

upplements the existing monitoring mechanism by providing authentic and ective data base on existing irrigation infrastructure which is spatial in nature h a viable cost.

e availability of high resolution satellite data from Cartosat missions has anced the scope of infrastructure mapping and monitoring.

gh resolution satellite data acquisition can be planned to match the field orting for effective monitoring of the project.

nitoring visit can be effectively planned and carried out with the help of critical areas identified in irrigation infrastructure creation using satellite data and thus imizing the time required for each visit.

us, satellite based monitoring addresses both inadequacy in number of

nceptualisation and Methodology Development

t the instance of Planning Commission, NRSC, ISRO oposed the concept on “Satellite Technology pplications in Irrigation Infrastructure Mapping” cluding the scope of monitoring the progress made and otential created through AIBP.

ubsequently, NRSC, ISRO has developed the ethodology for assessment of irrigation potential created rough inventory and mapping of irrigation infrastructure ing high resolution satellite data through a pilot study rried out in two selected irrigation projects (Upper rishna Project in Karnataka and Teesta Project in West engal during 2004-05.

nceptualisation and Methodology Development

sic approach consists of inventory and mapping of existing igation infrastructure (such as canal network, irrigation and her related structures) from high resolution satellite data in on-going irrigation project and comparing the physical ogress & status to the design with proposed irrigation frastructure.

sed on the completion status of irrigation infrastructure derived om the satellite data and considering the hydraulic nnectivity from source to the outlet, the irrigation potential eated in the project is assessed.

e pilot study had captured the ground reality of the irrigation frastructure and its status in spatial domain. Based on the tellite derived information, percentage progress of AIBP works ong with critical gap areas were identified and an assessment

nceptualisation and Methodology Development

nus, the satellite data captures the existing irrigation frastructure and its physical status for time stamping its mpletion status.

also provides possibility to monitor the entire irrigation oject yet with limited field checks overcoming the nitation of physical visits to entire project area.

ne encouraging and satisfactory results of the pilot udy (in terms of progress status of infrastructure and sociated irrigation potential created) were objective in ture and compared well with ground realities which ere verified and reported by CWC field offices and State overnment departments.

P Phase-I and Phase-II Studies using Cartosat-1 data by NRSC

availability of Indian Cartosat-1 (2.5 m resolution) data from 5-06 provided a cost effective solution for upscaling the study.

iew of the importance and utility of results arising out of llite data based pilot study, Planning Commission in sultation with NRSC and MoWR decided to upscale the study to onal scale covering all AIBP Projects with an estimated irrigation ential of 10 M.ha spread across different States in India in a sed manner.

ordingly, under phase-I, NRSC had carried out the study on sessment of Irrigation Potential Created in 53 AIBP funded gation Projects in India using Cartosat-1 Satellite data“ with an target area of 5.45 M.ha spread across 18 States in India during 7-09.

P Phase-I and Phase-II Studies using Cartosat-1 data by NRSC

llite data based I.P created was compared with field reported in 50 projects
nmary Report, February 2010).

field reported I.P created is about 25% more than the satellite data based
y. Assessment also indicated large deviation (>25%) in field reporting in
rojects out of 50 projects studied

C and MoWR utilized the study result for reconciliation of figures on I.P
tion through verifications and clarifications from respective State
rtments.

spatial irrigation infrastructure information generated in the study is utilized
urther monitoring by CWC.

reate awareness among planners, managers, engineers and other stake
ers, NRSC has conducted a two day workshop during May 2011 on the use
gh resolution Cartosat data for monitoring irrigation infrastructure and
ntial creation.

workshop recommended for adoption of technology among Central and

AIBP Phase-I and Phase-II Studies using Cartosat-1 data by NRSC

o further the capacity building process, NRSC has
ecuted additional 50 irrigation projects across 14 States
sentially to transfer technology in the domain of satellite
sed monitoring of AIBP funded irrigation projects
ring 2011-12.

his study was carried out with 14 Partner Institutions
.Is) consisting of State Remote Sensing Centres (SRSCs)
d academic institutions located across different states.

uring this phase, NRSC provided training and guidance
all teams from Partner Institutes and the technology was
nsferred to CWC by providing intensive on the job

Online monitoring through ISRO-BHUVAN

here are about 148 irrigation projects currently ongoing
der AIBP in India.

WC does monitoring of these projects twice a year and
eds two time period Cartosat data (pre and post
onsoon) in near real time for use by their monitoring
fices located across the country.

this regard, ISRO-BHUVAN platform meant for Earth
bservation visualisation provided an excellent
pportunity for online monitoring of irrigation projects.

facilitates hosting of satellite data with user access
ntrol and provides multiple access facility from various
cations.

Online monitoring through ISRO-BHUVAN

team headed by Chief Engineer, Project Monitoring rganisation, CWC had thoroughly evaluated the ISRO-HUVAN services for online monitoring of AIBP projects and commended for its implementation.

ccordingly, CWC (MoWR) had prepared a road map for plementation of satellite data based online monitoring of IBP projects through ISRO BHUVAN platform.

RSC has provided on the job training to 30 CWC officers rough two training programs during December 2012 and bruary 2013 for implementation of online monitoring of IBP projects.

urrently, CWC is monitoring 14 projects across 14 monitoring rectorates using the Bhuvan platform.

RSC is providing the necessary help and guidance to CWC

Conclusion

tellite based monitoring provides an excellent
portunity to monitor the entire irrigation project yet
th limited field checks overcoming the limitation of
ysical visits to entire project area.

RO-BHUVAN platform is an excellent facility for
line monitoring of AIBP implementation by CWC.

he adoption of this new application and using ISRO-
HUVAN platform for online monitoring by CWC and
her line departments would go a long way in
stitutionalization of technology.


Thank You