

Theme	Water Utilization
Application	Irrigation Management
Use Case	Command Area
Use Case ID	IM-CA-02
Other linked Use cases	Digital Hydro Infrastructure, Forecasted availability, Current Availability, Command area demand, New schemes, Crop production, Irrigation modernization plans, Benchmarking of Irrigation projects, Performance Evaluation Studies, Waterlogging and Salinity, Mobile App for Irrigation Management.
Description	Irrigation project comprises of the head works (storage or diversion dam), canal and distribution network in the command area for irrigation supplies to the command farmers. The size of the command area is worked out on the basis of water availability and water demand based on the cropping pattern approved by the agronomist, which varies from project to project. Efforts are made to optimise to give higher production and to maximise production per drop of water. The boundary of the command area is fixed based on the topography and other factors.
Used by	Planners, Decision makers, State WRDs, CWC, Farmers Associations
Priority	High Priority: This use case is the base for proper implementation of irrigation management for enhancing the food production in the country. Command Area component of an irrigation project governs the irrigation potential. Therefore, higher the coverage of command areas, higher will be the irrigation potential and more will be the enhancement in food security scenario.
Phase	Phase 2: DSS Development of IWCIMS
Business Problem	Issue: During planning and formulation of any irrigation project, the command area so available has to be nearer to the project headworks (i.e., source of water) and has also to be suitable for sustained irrigation. Approach: It is necessary to carry out soil survey and agrometeorological studies in the command area to establish the soil suitability and land irrigability classifications at the project planning stage itself so that the farmers can cultivate various types of crops accordingly to derive maximum benefits.
Output	Command area Details- GCA, CCA
Outcome	Command Area Map/Soil Map/ Climate Zone Map.
Visualization	<ol style="list-style-type: none"> Name of Irrigation Projects/states/Districts Command Area Map on scale 1:50,000 <ul style="list-style-type: none"> ➤ Gross Command Area (GCA) <ul style="list-style-type: none"> • Left Bank (GCA) (ha): • Right Bank (GCA) (ha): • Total GCA (ha): ➤ Culturable Command Area (CCA) <ul style="list-style-type: none"> • Left Bank (CCA) (ha): • Right Bank CCA (ha): • Total CCA (ha) ➤ Ratio of GCA to CCA (%): Soil Survey Map of Command Area on Scale 1:50000 <ul style="list-style-type: none"> ➤ Type of Soils: ➤ Land Irrigability Classifications

- Class I Land (%):
- Class II Land (%):
- Class III Land (%):
- Class IV Land (%):
- Command Area Slope (%):
- Ground Water Table
 - Pre Monsoon (m):
 - Post Monsoon (m):

Up-dation Frequency No updation is required

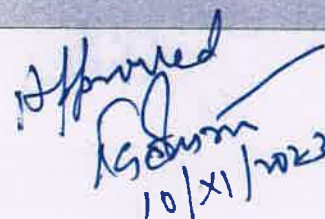
Measures of Success (KPIs) All canals and canal structures provided in the command area function normally as per design which needs regular monitoring.

Input

Data Required

Data	Unit	Type	Source
1. Command area maps		Map	Project Authorities
2. Salient features of these structures		Text	
3. Canal Network Map <ul style="list-style-type: none"> • Length of canal • Width of canal • Lined/unlined status of the canal • PIN/ UGPN • Discharge through canal 	Km m Lined/Unlined Km M ³ /sec	Decimal Number Decimal Number Text	
4. Count of conservation structure	No.	Decimal	
5. Type of structure		Number	
6. Volume (Capacity) of structure	MCM MCM MCM	Text Decimal Number	
7. Salient features of the conservation structures		Text	
8. Catchment area		Text	
9. Command area spatial layer (GIS, Maps from NRSC, India WRIS, State WRD); Hard Copy maps from State WRD/ Climatic Zone Map.	Km ²	Gross Capacity Live Capacity Dead Storage	
10. Name of command			
11. Type of project (Major/Medium/Minor)		Text	
12. Type of project(Storage or Reservoir/Diversion/Lift		Decimal	
13. River Name/ Basin transfer.	Major/Medium/Minor	Number	
14. Status		Map	
15. Name of the state involved	Storage		
16. Construction under scheme	Reservoir/Diversion/Lift		
17. Area			
18. Gross command area			
19. Cultivable command area		Text	
20. Tribal Sub-plan/ SC Sub- Plan.		Text	

21. Year of start			
22. Cost of development			
23. AIBP structure like canal etc		Text	
24. AIBP Command Area			
25. Division of Schemes (head/middle/tail)		Text Text	
26. Command area under Micro- irrigation.	Hectare Hectare	Decimal Number	
27. No. Of WUA formed.	Hectare	Decimal Number	
		Decimal Number	
	Hectare HeadMiddleTail	Text YYYY Decimal Number Text	
		Decimal Number Text	
Process			
Algorithm/Tool (Process flow along with the algorithm)	1. Topographical survey to prepare Command areas map on 1:50000 scale showing contours at 0.5 m interval. 2. Marking Blockwise GCA/CCA boundaries on Command Area map 3. Soil map of command area to be prepared based on detailed or semi-detailed soil survey. 4. Information on data points of this use case needs to be provided by the project authorities and loaded in the software.		
Data Validations	Pe-validation data from irrigation project authorities will be used. No additional validation required.		
Software Requirement (specific if any)	ArcGIS/ArcGIS Enterprise		
Dependencies & Risks	Data availability and permission from concerned project authority/state WRD		
User Acceptance Testing (UAT) By	CWC, State Water Resources Dept and concerned project authority		
Development Responsibility	HARSAC		
Reference material			


10/11/2023
निदेशक
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नई दिल्ली / New Delhi

This is to certify that the above BSR has been vetted and found satisfactory.

Details of Domain Organization SPOC and SME for Verification and Approval of above BSR



(Signature of SPOC)

SPOC Name:

SPOC Designation:

Organization: