Methodology

Numerous MCDM methods are employed for different applications in water resources planning such as river basin planning, hydropower applications, ground water planning, irrigation planning, etc. Some of them are ELECTRE-3 and 4, PROMETHEE-2, Compromise Programming, Cooperative Game Theory, Composite Programming, Analytic Hierarchy Process, Multi-Attribute Utility Theory, Multicriterion Q-Analysis, etc.

The steps are formulated for the selection of best/suitable alternative from the set of available alternative.

- Define the problem and fixing the criteria
- Appropriate data collection
- Establishment of feasible/efficient alternatives
- Formulation of pay off matrix (alternative versus criteria array)
- Selection of appropriate method to solve the problem
- Incorporation of decision makers preference structure
- Choosing one or more of the best/suitable alternative for the analysis

PROMETHEE (Preference Ranking Organization Method Of Enrichment Evaluation-An Appropriate Method To Solve The Problem)

The basic principle of PROMETHEE II is based on a pair-wise comparison of alterative along each recognized criterion. Alterative are evaluated according to different criteria, which have to be maximized or minimized

6) WORK PLAN
List of Activities to be carried out to complete the Study

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Period</th>
<th>Plan of Work</th>
</tr>
</thead>
</table>
| 1      | First Year| • Completion of Course Work  
|        |          | • Study of literature and extensive survey  
|        |          | • Finalization of Topic  
|        |          | • Preparation of Synopsis  
|        |          | • Presentation of Topic  |
| 2      | Second Year| • Site visits  
|        |          | • Collection of data  
|        |          | • Implementing the method  
|        |          | • Finding out the results  
|        |          | • Comparison of the result  
|        |          | • Paper Publication  |
| 3      | Third Year| • Analysis of Result  
|        |          | • Preparation of Summary  
|        |          | • Checking of Plagiarism  
|        |          | • Paper Publication  
|        |          | • Finalizing the thesis  
|        |          | • Pre-thesis viva  
|        |          | • Any correction from suggestions  
|        |          | • Hard Binding of Thesis  
|        |          | • Thesis Submission to SJTU  
|        |          | • Final Defence  

Sr No | Activity | Duration (Days)
<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Literature study</td>
<td>30 Days</td>
</tr>
<tr>
<td>02</td>
<td>Material collection</td>
<td>10 Days</td>
</tr>
<tr>
<td>03</td>
<td>Site visit</td>
<td>10 Days</td>
</tr>
<tr>
<td>04</td>
<td>Interpretation of data</td>
<td>07 Days</td>
</tr>
<tr>
<td>05</td>
<td>Analysis of data</td>
<td>03 Days</td>
</tr>
<tr>
<td>06</td>
<td>Preparation of software tool</td>
<td>15 Days</td>
</tr>
<tr>
<td>07</td>
<td>Comparison of results</td>
<td>02 Days</td>
</tr>
<tr>
<td>08</td>
<td>Final Results and Discussion</td>
<td>15 Days</td>
</tr>
<tr>
<td>09</td>
<td>Preparation of Report And Plagiarism</td>
<td>15 Days</td>
</tr>
<tr>
<td>10</td>
<td>Submission of Report</td>
<td>07 Days</td>
</tr>
</tbody>
</table>

7) Places/labs/Sites to be visited-
   1. Begumpur branch canal
2. Distributaries on Begumpur branch canal
3. Distributaries on Mohol–karamba branch canal
4. Visit to Ujjani dam and Yashwant Reservoir
5. Canal and development authority office solapur