Analysing the Interactions of Operation Strategy Elements and its’ Strategic Reconciliation: A Case of Chilika Lagoon

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Abstract
The Chilika Lagoon is situated on the east-coast of India, the largest brackish Water Lagoon with estuarine character. It is the largest wintering ground for migratory waterfowl found anywhere on the Indian sub-continent. Presently, Chilika ecosystem had been encountering a number of problem and threat like – siltation, shrinkage of water spread area, choking of the inlet channel as well as shifting of the mouth connecting to the sea, decrease in salinity and fishery resources, proliferation of fresh water invasive species due to decrease in salinity (Chilika Development Authority, Department of Forest and Environment, Government of India). The study was conducted to find the operational strategy of a governmental organisation i.e. Chilika Development Authority (CDA), focused for social and ecological uplifting and to find gaps against the present operation of CDA. This study uses the framework of Operations Strategy Matrix to see the operation strategy required against the mission and vision of the Chilika Development Authority and studies and analyse the present operation for identification of the gaps. Primary data and secondary information have been collected for this purpose. The case study identifies that CDA among others lacks in the strategic operational decision areas of capacity building and strengthening of the development and organisation, required for a knowledge-based organisation with the teeth required for implementing the action plan to impact the environmental and societal changes with growth objectives.

Keywords : Operations Strategy, Strategic Reconciliation, case study

INTRODUCTION
The Chilika Lagoon, the largest brackish water lagoon with estuarine character, is situated on the east-coast of India. It lies in the districts of Puri, Khurda and Ganjam of Odisha State. The combination of saline water and fresh water and a unique balance of these create an ecological environment for growth of macro benthos, sea grass and other feed for salt-water and fresh water fish and other aquatic species which subsequently attracts large congregation of birds with plentifully availability of their feed. Hence, Chilika supports some of the largest congregation of
migratory birds in the country, particularly during the winter. It is one of the hotspot of biodiversity in the country, and some rare, vulnerable and endangered species listed in the IUCN Red List of threatened Animals inhabit in the lagoon. The total numbers of fish species are reported to be 225. Along with a variety of phytoplankton, algae and aquatic plants, the Lake region also supports over 350 species of non-aquatic plants (Sekhar, 2004; Chilika Development Authority, Department of Forest and Environment, Government of India). Chilika is a source of livelihood for the locals as a fish producing water-body and revenue generating tourist destination in which the ecology of Chilika has an important role to play. Unless the ecological balance is maintained, the fish production gets reduced and also affects the avian-fauna population which a major source of attraction of tourist, in turn overall affecting the population residing around the lake and dependent on it.

**Organisational structure**

Chilika Development Authority (CDA) was created in the year 1992 as an autonomous body by Government of Orissa with a Governing Body chaired by the Hon’ble Chief Minister. Secretaries of 10 different key departments like tourism, fishery, disaster management, animal husbandry, etc., members of parliament & legislative assemblies, district collectors of Puri, Khurda and Gnjam are members in the Governing Body. The Governing Body is entrusted with the task of general superintendence of the affairs of the Chilika Development Authority. The Executive Committee chaired by the Principal Secretary (Forest and Environment) is responsible for taking executive decisions pertaining to CDA. The Chief Executive of the CDA is the member secretary of the governing and executive body. The Chief Executive, of the CDA is entrusted with implantation of various programmes and work plans, and management of the CDA office. During the study, Dr. Ajit Pattnaik was the Chief Executive, assisted by Sri Rajesh Kumar, Additional Chief Executive of CDA. There are three wings of the Chilika Development Authority i.e. (1) Forest Wing, (2) Engineering Wing and (3) Scientific Wing. Some major intervention are Hydrological intervention & Opening of sea mouth, Community based programmes, Improving community infrastructure and livelihoods, and Building knowledge base.

The study was conducted to find the operational strategy of a governmental organisation i.e. CDA, focused for social and ecological upliftment. The basic aims and objectives are as below.

1. To study the operational strategy best suited for such initiative along the mission and vision statements, with a motive of restoration of the affected ecology with a holistic approach of community development and participation in such effort.
2. To study the present operational strategy of the organisation in that direction for conservation of ecology of Chilika lagoon and all around development in and around the lagoon including the people living in the catchment area dependent on the Chilka Lake for their livelihood.
3. To study whether there is any gap in their Operation Strategy and their Service Vision in that regard including the gaps between the resources and capabilities in terms of structural & infrastructural aspects and their objectives? To suggest/recommend action plan to improve their operational strategy to achieve their objectives.

**RESEARCH FRAMEWORK**

The Operations Strategy Matrix framework was used to see the operation strategy required against the mission and vision of the Chilika Development Authority and then the present operation strategy was studied and analysed for ascertaining the gaps. Operation strategy, as
shown in Figure 1, below is the decisions which shape the long term capabilities of the organisations and their contribution through the ongoing reconciliation of market requirements and operations recourses. The operation strategy is that decisions based on the organisations’ capacity and capability building with accumulation and usage of resources required for performance objectives to meet the need of the market. As per the market requirements, the performance objectives are set in the sphere of Quality, Speed, Dependability, Flexibility and cost.

![Figure 1: Operations strategy Matrix Framework (Slack and Lewis, 2009)](image)

Then comes the decision areas as regards usage of resources in capacity, supply network, process technology and development and organisation, from structural to infrastructural decisions in that continuum as shown in Figure 2. More the resources usage required from human capital, knowledge and learning than the capacity, facility, technology, the more vital becomes the infrastructural decisions. The importance of the structural and/or infrastructural decisions is based on the performance objectives.

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Supply Network</th>
<th>Process Technology</th>
<th>Development and Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural issues</td>
<td></td>
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<td></td>
<td></td>
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<td>Infrastructural issues</td>
</tr>
</tbody>
</table>

![Figure 2: Operations strategy decision areas (Slack and Lewis, 2009)](image)

**RESEARCH METHODOLOGY**

The study was conducted at Chilika Development Authority (CDA), Bhubaneswar and their Wetland Research and Training Centre, Balugaon to have an insight on their operation and management practices and at two villages on the shore of Chilika namely, Manglajodi and Kalupada, Dist. Khurda, to know about the measures taken and results thereof on the eco-tourism
and community development initiatives by CDA. The case study has been prepared by collecting data from primary as well as secondary sources. Primary data and information have been collected from the organisation by visiting their facilities and in-depth interviews / interactions with Dr. Ajit Pattnaik, IFS, Chief Executive of CDA, Mr. Gurdip Rastogi, Senior Scientist, Mr. Debasis Mohapatra, Senior Research Scholar and other Research Scholars and from one presentation by the Research Scholars at the Wetland Research and Training Centre, Balugaon. The work of and result of CDA initiative at the grass root level on community development and eco-tourism was also gathered from informal interactions with villager leaders of two villages and manager of two eco-cottages. Secondary information has been collected from published sources of CDA (Chilika Development Authority Annual Reports, 2011-12 & 12-13).

With this research methodology and the research framework discussed in the previous paragraph the operations strategy was analysed regards structural and infrastructural decisions needed for achieving the performance objectives.

**OPERATIONS STRATEGY ANALYSED**

In this study the market requirement is represented by the understanding of the ecological and community need and development of mission and vision objectives as discussed in the foregoing chapters and with that the performance objectives on the Quality, Speed, Dependability, Flexibility and cost dimensions are set and then structural and infrastructural decisions on capacity, supply network, process technology and development and organisation required for fulfilment of the respective performance objectives are taken care of to create the operation strategy. To the broad objectives of CDA, the performance objectives and the decision areas have been arrived at as per their importance as mentioned below in Table 1 to prepare an operation strategy matrix for CDA

*Table 1: Performance objectives & operation strategy decision areas as per the mission & vision objective of CDA*

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Broad mission and vision objectives of CDA (Market Requirement)</th>
<th>Performance Objective</th>
<th>Operations Strategy Decision Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To protect the Lake eco-system with all its genetic diversity.</td>
<td>Quality &amp; Speed</td>
<td>Capacity &amp; Development and Organisation</td>
</tr>
<tr>
<td>2</td>
<td>To execute various multidimensional developmental activities either itself or through some other agency to enhance the economic condition of the community.</td>
<td>Flexibility &amp; Dependability</td>
<td>Capacity &amp; Supply Network</td>
</tr>
<tr>
<td>3</td>
<td>To survey, plan and prepare the project proposal for integrated Resource Management for all-round development in and around the Lake.</td>
<td>Quality &amp; Speed</td>
<td>Process Technology &amp; Development and Organisation</td>
</tr>
<tr>
<td>4</td>
<td>To co-operate and collaborate with other institutions of the States, National and International institutions for all-round development of the Lake.</td>
<td>Quality &amp; Flexibility</td>
<td>Development and Organisation</td>
</tr>
<tr>
<td>Sl. No.</td>
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<tr>
<td>5</td>
<td>To establish management information system for the Lake.</td>
<td>Quality</td>
<td>Capacity &amp; Development and Organisation</td>
</tr>
<tr>
<td>6</td>
<td>To promote long term multidisciplinary research, prepare environment status report and establish education centre for the lake.</td>
<td>Quality &amp; Speed</td>
<td>Capacity &amp; Development and Organisation</td>
</tr>
<tr>
<td>7</td>
<td>Eco-restoration of Islands including habitat improvement of birds</td>
<td>Quality &amp; Speed</td>
<td>Supply Network &amp; Development and Organisation</td>
</tr>
<tr>
<td>8</td>
<td>Promotion of Eco-tourism.</td>
<td>Flexibility &amp; Dependability</td>
<td>Capacity &amp; Development and Organisation</td>
</tr>
<tr>
<td>9</td>
<td>Inventory, assessment of the lagoon resources and environmental impact assessment.</td>
<td>Quality &amp; Speed</td>
<td>Capacity &amp; Development and Organisation</td>
</tr>
<tr>
<td>10</td>
<td>To upgrade the management and professional skills of the member associated with conservation and development of the Lagoon.</td>
<td>Quality</td>
<td>Supply Network &amp; Development and Organisation</td>
</tr>
</tbody>
</table>

[Adapted from Chilika Development Authority (CDA), Department of Forest and Environment, Government of Odisha (GoO)]

Cost appears not to be an important performance objective because of it as a governmental initiative having ecological and environmental concern being funded by World Bank and other global agencies. So, with the kind of financial resources CDA can garner to achieve or rather work towards it’s’ mission and vision objective, the operations strategy matrix with the performance objectives and decision areas as mentioned in Table No. 2, should be as described in Table 2.

<table>
<thead>
<tr>
<th>RESOURCE USAGES</th>
<th>MARKET COMPETITIVENESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>***</td>
</tr>
<tr>
<td>Speed</td>
<td>**</td>
</tr>
<tr>
<td>Dependability</td>
<td>*</td>
</tr>
<tr>
<td>Flexibility</td>
<td>*</td>
</tr>
<tr>
<td>Cost</td>
<td></td>
</tr>
</tbody>
</table>

**Pivotal **Critical *Secondary

### Table 2: Operation Strategy Matrix for CDA (adapted from Slack and Lewis, 2009)
It can be observed that the pivotal performance objectives and operation strategy decision areas are the intersection of (1) quality & capacity and (2) quality & development & organization with critical intersection being speed & capacity and speed & development & organization. So, it is important that the extreme structural issue of capacity building and extreme infrastructural issue of development & organization are the vital strategic decisions for CDA, as a knowledge-based organization, required to deliver results on ecology and community development in and around Chilika for which it was created with the quality and speed as these issues do not wait for anybody and no lackadaisical or half-cooked approach/measure can provide solution, rather can create long-term damage for apathetic attitude.

The study of the operation of CDA on ground was conducted to find the operational decisions for the resource usages, whether it fits with the performance objectives, which are constant, or there is any gap to be filled.

**Operation Strategy Elements**

The performance objectives being decided on the basis of broad objectives of the CDA, the study was conducted in various decisions areas of capacity, supply network, process technology and development and organisation and the findings are as discussed below.

**Capacity**

CDA started the process of eco-restoration with outsourcing the work of assessment of eco-health of Chilika lake to the premier institutes of the country like National Institute of Oceanography, (NIO) Goa, the Central Water and Power Research Station (CWPRS), Pune, to find an immediate solution to the impending problem. They got the first measure breakthrough with the opening of the sea-mouth in the year 2000 that reversed the deterioration of the ecosystem by bringing in salt water through the dredged inlet at the sea mouth with the tidal influx. This historical event also resulted in tremendous rise in the fish, crab and prawn production with fish landing during the year 2000-2001 improved to 4889.21 MT, which had declined on an average to mere 1600 MTs. During the year 2001-2002, it recorded a record high to be 11988.88 MT (Chilika Development Authority (CDA), Department of Forest and Environment, Government of India, GoI). As the success was achieved without any capacity, the priority and importance of capacity building has been slow and insufficient as noticed during the study. Only in the year 2002, they started the research work on Chilika eco-system by building one wetland research and training centre at Balugaon on the shoreline of Chilika.

It is noticed that they are present activities are restricted mainly on monitoring of the Chilika lakes’ ecosystem that is with the motive of identifying any signal of deterioration rather than planning for any preventive action or any capacity building for pro-active action. All the equipment in the research centre like Atomic Absorption Spectro-photometer (AAS) for heavy metal/bio-mass sample testing, High Performance Liquid Chromatography (HPLC) for Chemical Analysis of the lake water, Gas Chromatography (GC) for Chemical Analysis of pesticide & insecticide contents in lake water are for knowing the eco-health of the lake. But they are found to be lacking on the capacity to intervene on their own in case of catastrophe. They are presently using eco-system modelling for hind-casting & forecasting of ecological health through simulation, but no action plan or capacity for the remedial or restoration measures. This fact was obvious in the case of the “Phailin” super cyclone that hit the eastern coast including Chilika in the month of October, 2012 that resulted in death of thousands of birds and fish population and there was neither any action plant nor capacity for the aftermath of the super cyclone for restoration of the eco-health of Chilika.
They were also found lacking with capacity to execute various multidimensional developmental activities to enhance the economic condition of the community on the shore of Chilika and inside the catchment area that are largely dependent on Chilika, which is one of their objective. This has to be done either by them or through some other agency. CDA had outsourced the job of surveying socio-economic condition of fishers in and around Chilika and finding alternative livelihood options for them to Japan International Cooperation Agency (JICA Project) (Pattanaik and Kobayashi, 2009). But the report’s findings and recommendation has not been implemented. In the eco-tourism sector, the capacity to build infrastructure is not there with them with the capacity to only recommend without any binding on the other state department. Therefore, the basic infrastructure for development of tourism is not there with people defecating in open which is while polluting the lake also dissuading tourists to visit place like Manglajodi on the shore of the lake which is major destination of migratory birds being declared as “Destination Fly-way” by the U.N. In fact one tourist centre opened up in Satpada, one important entry point to Chilika where the Irrawaddy dolphins are sighted, was allowed to be closed because of its’ dilapidated condition due to lack of maintenance. All the monitoring activities of the avian fauna including migratory birds found to be entrusted to Bombay Natural History Society (BNHS). With the kind of funding as grant in aid coming from different international organisation like WWF, IMF & World Bank, there is no paucity of fund (Rs.54, 764, 464 in 2010-11, Rs.67,052,914 coming with the approval of project proposals), the fund is not a constraint for capacity building.

So, it was found in the study that their present capacity is for inventory, assessment of the lagoon resources and environmental impact assessment, which is one of their objectives without any significant capacity to be pro-active or act upon the findings at the speed required for immediate restoration.

Supply Network

It was found that CDA is largely dependent on the supply network, for their critical operational areas, like National Institute of Oceanography, (NIO) Goa for study of the impact of the sea, the Central Water and Power Research Station (CWPRS), Pune for the impact and assessment of fresh water, the BNHS for migratory birds and Centre for Inland Fisheries Research Institute (CIFRI) for fishery research. The critical equipment like data buoys (floating high-tech instruments) stationed at 22 places inside Chilika Lake to collect real-time data of the chemical composition of water and transmit 24x7 to the research centre via satellite are purchased from U.S.A. were found to be lying with defects which could not be rectified due to lack of technical assistance from the manufacturing company hampering the critical data collection. So, the question arises that whether such critical operation areas should be supply dependent or outsourced.

Process Technology

The process technology was found to be modern with all the high-tech and modern software of latest model type to assess anthropogenic, physical & bio-chemical influences which easily available to them with the international collaboration and support through IMF & WB support and funding. With the environmental concern for ecological balance, the international organisations are found to be forthcoming in sharing the latest process technology with CDA. But there appeared lack of understanding of the process technology and learning against the possessed technology without any customisation or improvement upon that.
**Organisation & Development**

The most important infrastructural decision area which is vital for any knowledge-based organisation. The human resources required for achieving the mission and vision objectives of CDA were found to be critically missing. With the three operational wings i.e. Engineering, Forest and Scientific for the monitoring the ecosystem, implementing action plan for the growth of the eco-health of the lake, community participation and development, enhancing the economic condition of the people in and around Chilka including fisherman, finding alternative livelihood, the human resources is the most important ingredient to boost up the activities. It was found out that the engineering and forest wings were insufficiently staffed with one Assistant and couple of Junior Engineers, only monitoring activities of the inland construction activities like outsourced construction and repairing of jetties for fisherman, culvert and causeway for communication activities and the forest wing with a Assistant Conservator of Forests and a couple of Range Officers, are engaged in monitoring afforestation activities and collaborating the regular forest divisions with instructions and recommendation not legally binding to them. Hence, the main work left was that of monitoring and research activities undertaken by the scientific wing at Wetland Research and Training Centre at Balugaon. It was found to be managed by two Senior Scientists who are the permanent staff and six research scholars who are temporary working there varying from 2 to 10 years. The Senior Scientists were found to be playing a supervisory role against all routine monitoring works with the help of the research scholars. The author had the opportunity to participate in one of the presentation during the period of study on their ongoing activities which was found to be routine in nature. Apart from that one historical turning point, no substantial success has been achieved against the broad objectives throughout these years.

With the aforesaid research findings against their structural and infrastructural decision areas, now we can compare and discuss about the present operations vis-a-vis operation strategy as defined against the performance objectives to meet the mission and vision broad objectives and identify gaps, if any, in the following sections.

**GAPs IN THE DECISION AREAS**

The findings on the resources and capabilities front in the pivotal and critical decisions areas of capacity and organisation and development of the operation strategy was analysed and the following gaps are observed:

**Capacity**

During the start-up of CDA, the requirement of immediate resolution of the problem of deteriorating eco-system of the Chilka Lake necessitated to go for outsourcing of all activities as cause findings, research work and implementation of the recommended measures. But to address and fulfil the long-term mission and vision objectives, there has to be capacity building in terms research-work, developing expertise in monitoring, preventive actions and proactive actions for keeping the ecosystem of the lake healthy and thriving which was found to be lacking except that of monitoring with high-tech lab equipment. But here also, for continuous monitoring though modern/high-tech equipment reduces the variability of results and enable handling of large number of data, the most crucial factor is that of standardisation of processes and developing robust techniques in monitoring activities for which there should be in-house capability to handle and maintain these equipment, which was also found lacking as much as that the high-tech equipment were seen to be handled by novice hands and important monitoring equipment like data buoys were found lying unused due to defects and lack of repair. So, the continuous
monitoring processes should not be hampered due to the supply network problem. In the community development aspects as well both the research work and the implementation of the proposed action plan, they are dependent on outside agencies without any financial power or implementation mechanism controlled by the various state departments and district administrations in and around Chilika Lake. Hence it becomes difficult to have co-ordinated action plan and implementation efforts for the community participation and their development with slow progress. In case of alternative livelihood policy for community around Chilka, as proposed by JICA (Japan International Cooperation Agency) (Pattnaik and Kobayashi, 2009), the people of some villages were provided with soft loan for goat firming through state financial agencies, but due to absence of direct involvement of CDA and monitoring thereof as done by the respective district action the scheme was lost within a year time without providing any long-term benefit to the local populace. Similarly, the fisherman were given training on the fishing practices, under “Net Fish” banner, like not to use “Zero Net” as the juvenile fishes also get caught affecting the population and growth in fish production and also provided with insulated box to keep the catches for long period of time through Marine Product Export Development Authority (MPEDA). But due to lack of direct involvement of CDA and mechanism to verify the effects of the training and financial help, the effort got diluted with unacceptable practices affecting the overall production at 7456.03 M.T. in 2011-12 & 7114.30 in 2012-13 showing decrease of 3.6% and 4.6% during these years, with Maximum Sustainable Yield (MSY) of 8,000 M.T. per annum with Optimal Yield (OY) of 27,000 M.T. per annum in ideal condition. Again in case of development Eco-tourism sector, there is no capacity of CDA to build infrastructure. In fact, there appeared even lack of basic infrastructure like roads and toilets, which are vital for eco-tourism. In fact during these years a couple of eco-cottages have come up that too on individual entrepreneurship effort not with any active programme or policy of CDA. The tourist centre at Stapada, an important destination for Irrawaddy dolphins, found to be in dilapidated condition with its’ closure from the last year due to lack of maintenance and repair. The CDA has its’ objective to create an education centre at Chilika, but no such effort found visible to make it possible in near future. For the afforestation and watershed programmes to stop siltation in the catchment areas, they are also found without capacity with only advisory capacity and role, waiting the district administration and forest departments to implement those programmes. In the case of habitat improvement of birds, they have not the least capacity to monitor or research work. So, in overall assessment CDA found lacking in capacity decisions to in all aspects though having some high-tech and modern equipment for monitoring and research activities but found useless with lack of expert hands in handling or maintaining these equipment.

Organisation & Development
In this area the CDA still uses the same organisational structure since its establishment during the year 1992, with only changes with addition of Wetland Research and Training Centre at Balugaon, critically understaffed to the vision and mission objectives, still with the mindset of an agency of collaborative and advisory role-play. The backbone of the Authority which is the scientific wing stationed at the Research Centre expected to do monitoring of the eco-system of the Chilika and do research work and train staff for the sustainable growth of the eco-health of Chilika, is allowed to run without experts of this field. Both the monitoring and research works expected to be handled by research scholar who is on temporary assignment with no future for them and this is hampering the overall research work which is essential for long-term innovation in this field. With their physiological and safety needs, as in Maslow’s law of hierarchy of needs,
not being fulfilled, CDA cannot expect them to do research work requiring creative talent which is a need of self-actualization (as per the Maslow’s hierarchy of needs).

There is also threat of losing or discontinuance of the slow research work by employees on leaving the organisation for better opportunities outside and the new person starting from the scratch, hampering the speed and quality of work. With all but the Senior Scientists who are more in the role of supervisor, on temporary assignments, the pivotal decision area of organisation and development in operation is having a huge gap to the operation strategy required for accomplishment of mission and vision objectives. The leader i.e. Dr. Ajit Pattnaik, Chief Executive of CDA, is a scholar in the field, but with ideas percolating from top to bottom, it has not encouraged creative ideas to mushroom from the bottom i.e. from the research workers or attracted talents.

MANAGERIAL RECOMMENDATIONS
The followings are the some of the managerial recommendations to bring them back to the platform of the operation strategy required for accomplishment of the performance objectives.
1. They have to build capacity in terms of research, monitoring and for operational effectiveness in case of remedial action to be taken as and when required as an interventional measure for eco-restoration.
2. The capacity has to be built on its’ own against the critical elements like development of birds’ habitat, development of eco-tourism, efficient management of fish production and community development work with less dependence on the supply net-work and ensuring the capability to handle critical equipment purchased or obtained from outside with its’ timely repair and maintenance.
3. Legal and administrative authority to implement and act upon the policy decisions towards broad objectives should be invested upon them by the state government to be operationally effective in place of slow moving and ineffective district administrative mechanism.
4. The process of restructuring of the organisation should be taken as a priority as it is critical to the success of CDA in achieving its’ objectives. More permanent talented employees should be hired with good pays and perks to dedicate themselves on research works than routine work towards overall growth of the ecosystem of Chilika and with the bio-diversity and unique ecosystem, it should be a breeding ground of innovation in the field and a platform of learning by doing and growth.
5. As an alternative source of livelihood for the locals, eco-tourism has to be boosted with concerted effort of infrastructure development, community involvement and sanitation measures by bringing change in the habits of the local.

There has to be substantial improvement in the professional approach and functioning of the CDA, beyond the functioning as a typical government organisation, bringing in focused approach while closing the gaps as found out in the study with a fit of the operational resources in key decision areas to the performance objectives as defined with the market requirement i.e. the mission and vision objectives of the Chilika Development Authority.

CONCLUSION
The study is much of significance with the need for more intervention and focus in modern times on such ecological and environmental issues with community participation. While facing ecological and environmental challenges, there appears well thought-out planning processes from the government but in absence of proper operation strategy the resources and capabilities
are not matched with the objectives of the planning processes and though the short term objectives are fulfilled, the long term objectives get lost by passage of time. So, in such societal and ecological intervention, the knowledge and learning plays a major role in development of operational strategy to the need of the mission and vision objectives and mobilise the resources in structural and infrastructural matters and maintain a balance of that. The structural and infrastructural decisions are to be made keeping in mind the capabilities and requirement. So, this study will give a direction to move in such decision making and to manage such effort for sustainable social and ecological development.

In this study it was found out that though Chilika Development Authority (CDA) has broad mission and objectives of maintaining the eco-system of Chilika Lake with community participation and their development, they are lacking with the strategic operational decision areas of capacity building and strengthening of the development and organisation, required for a knowledge-based organisation with the teeth required for implementing the action plan to impact the environmental and societal changes with growth objectives.

Limitation of the study
The study was limited to the organisation and its’ functioning at the grass-root level as gathered from a couple of villages on the western side of the lake. The findings were on the basis of the information and data as shared and made available by the CDA. There is further scope of study with more in-depth interviews of the employees of scientific wing including the engineering and forest wings and covering the other villages of the catchment areas not cover under the present study to reveal more intensive findings and managerial implications thereof.

References