Executive Summary (ISEA Report)

Maharashtra Water Sector Improvement Project
Integrated Social and Environmental Assessment Study

EXECUTIVE SUMMARY

INTRODUCTION

The availability of water in the State of Maharashtra is highly uneven, both spatially and temporally; most of the rainfall occurs in just 40 to 100 days in a year. The ultimate irrigation potential of the state is about 12.6 million ha, of which 8.5 million ha is from surface water and 4.1 million ha from ground water sources. The total irrigation potential created in the state was 4.7 million ha (surface: 3.7 million ha and ground water: 1 million ha), or about 37% of ultimate irrigation potential till 2003. Currently, only about 15% of gross cropped area is irrigated.

The Government of Maharashtra (GoM) has approached the World Bank for assistance for the Maharashtra Water Sector Improvement Project (MWSIP) with the following objectives:

(i) Strengthen the state’s capacity for multi-sectoral planning, development, and sustainable management of the water resources; and

(ii) Improve irrigation service delivery on sustainable basis, to increase productivity of irrigated agriculture and contribute to rural poverty reduction.

Scope of the Project

The MWSIP envisages the rehabilitation and modernization of the existing irrigation systems. No new projects are proposed to be undertaken in this project.

Integrated Social and Environmental Assessment Study

As a requirement of the World Bank, an Integrated Social and Environment Assessment (ISEA) Study was undertaken with the objective to provide inputs into the design of MWSIP, through identification of key environmental and social issues related to the
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project, mitigate potential concerns and devise opportunities to enhance the benefits. This was carried out by an external agency hired by GoM. The ISEA study led to development of Social and Environmental Management Framework (SEMF) that integrated environmental and social considerations at all stages of MWSIP such as planning, implementation and monitoring.

The ISEA reviewed relevant social, environmental and sectoral policies and regulatory framework at the national and state level for the water sector. Various institutional and policy reforms that GoM is undertaking to enhance the efficiency of service delivery in water resources were also reviewed. An assessment of gaps in the policies and regulations within the context of social and environmental management was also made. Accordingly, recommendations for institutional capacity building have been made.

In MWSIP, the physical asset improvement activities are of rehabilitation and modernization nature of the existing irrigation systems which do not require environmental clearance from central or state agencies. No new land acquisition is envisaged. The project authorities have already acquired land for burrow pits at the time of project construction, in the past. As no fresh land acquisition for burrow pits are required, no clearance from any agency is needed.

Schemes covered under the Project and sample of schemes for ISEA study

The GoM has identified 286 irrigation projects in various categories of major, medium and minor irrigation schemes to be taken up during the first phase of MWSIP. 87 schemes are proposed to be undertaken in the first year of implementation. Out of 286 schemes, 19 representative schemes had been selected for the ISEA Study, as a sample. The sample included 6 major completed schemes, 6 medium schemes, 6 minor schemes and 1 on-going major irrigation scheme. The criteria for selection of these schemes was their spatial distribution across the state, coverage to all river basins, coverage in all agro-climatic zones, coverage among various social groups and coverage of tribal dominated areas.
Categorization of the Project

The original design of the MWSIP included provisions for providing assistance to the new and on-going irrigation schemes of the GoM, and accordingly, the Project was classified as a “Category A” project, with significant anticipated social and environmental impacts. For this purpose, an ongoing scheme was considered for the ISEA study. However, the revised scope of the Project limits the physical works component to rehabilitation and modernization of existing irrigation schemes only. As a consequence, the possibility of serious adverse social and environmental impacts is significantly reduced. This was further substantiated by the results of the survey of the 18 representative rehabilitation schemes, which did not indicate any serious and unmanageable adverse social and environmental impacts related to the activities proposed under the MWSIP. Due to the large number of schemes that can be potentially covered under the current and subsequent phases of the Project, a framework approach has been adopted, leading to the development of a comprehensive SEMF. The SEMF will be applied to every sub-project that is rehabilitated under the MWSIP, and is designed to adequately address a diverse range of social and environmental issues that might arise in the numerous sub-project activities to be supported during the duration of the MWSIP.

STUDY METHODOLOGY

The methodology adopted for the ISEA study started with the collection and analysis of the existing data regarding participatory irrigation management, agriculture situation and social and environmental issues associated with irrigation projects. The data required for the study was collected through primary (through interviews) and secondary sources of information.

In all, 843 individual household surveys were conducted in the selected schemes covering 46 villages. The villages were identified based on their locations in the head,
middle and tail reaches of the system. The village level data was collected for 42 villages
where groups of 15 -30 people were formed to assess the village profiles.

Around 50 workshops/ stakeholder meetings were organized across the selected
command areas to collect the community level data. The meetings were attended by
about 2000 stakeholders where there was an overwhelming participation of women,
landless and vulnerable groups. During the workshops, perceptions towards social and
environmental issues were discussed with the stakeholders. The proceedings of the
stakeholder meetings have been documented and videographed for the purposes of
study and records.

Apart from the above consultation workshops and interviews with command area
farmers, 15 interviews with key stakeholders were also conducted mainly focusing on
the policy, management, implementation of irrigation schemes. The questions to these
key people were structured towards their areas of specialization and their perception to
enhance the service delivery and policy matters for the sustainability of the water sector.

POLICY, ACTS AND INSTITUTIONAL FRAMEWORK

There are various policies and Acts of Central Government and GoM for the
management and conservation of the water resources. As part of ISEA, a brief overview
of these policy frameworks at the national and State levels, specific to the water sector
and in the context of the ISEA study was made. Further, ongoing policy reforms which
are currently being undertaken by the GoM and as relevant to the Project were also
reviewed. Finally, the adequacy of the existing and the proposed policy frameworks has
been discussed and gaps were identified both at the policy and institutional levels. An
analysis was also made to find out the relevance (trigger) of various safeguard policies
of the Bank to the proposed project interventions and found that 4.01 OP/BP/GP 4.01 -
Environmental Assessment, 4.09 OP - Pest Management, 4.37 OP - Dam Safety, 4.20
OD - Indigenous Population and 4.12 OP – Involuntary Resettlement might trigger. The
study concluded that since the activities/ interventions proposed under MWSIP are for
the rehabilitation and modernization of existing irrigation schemes and no new schemes
are proposed to be undertaken there are no major and irreversible impacts and the
proposed social and environmental management frameworks will address any issues that may arise during project implementation. On institutional aspects, GoM recognized the urgent need for restructuring the present set up to enhance the efficiency of water management in the State and accordingly, following major reforms in water resources sector have already been initiated.

- Maharashtra Water Resources Regulatory Authority (MWRRA) Act 2003 for regulation and management of water resources, decide on water entitlement, agree on tariff system covering O&M of the system.
- Maharashtra Management of Irrigation Systems by Farmers' Ordinance, 2004 empowering water users to take over the system delivery at the minor level.

SOCIAL AND ENVIRONMENTAL ISSUES RELATED TO THE PROJECT

The ISEA study team observed significant positive impacts due to the development of irrigation projects. Large landholding farms in several places have taken up to diversified farming and intensified cropping with improved farm practices. This has led to significant improvement in the income levels. Marginal sections of the populations particularly the landless are also benefited from the increased employment due to irrigated agriculture.

The infrastructure development (e.g. roads, schools, health centers, marketing) in these areas is also attributed to the irrigated agriculture.

The detailed process followed for ISEA is as follows:

- Identification of key stakeholders in the project,
- Dissemination of project objectives to stakeholders,
- Interaction with the stakeholders for identification of pertinent issues regarding existing water use, demand, supply and ways to maximize its productivity, for incorporation in the ISEA,
- Obtaining feedback from the stakeholders towards addressing the issues and future concerns raised by them through a participatory process,
- Identification of ways to resolve conflicts between stakeholder groups, if any, in a participatory manner,
- Developing a participatory framework and consultation strategy for future works.
Project stakeholders identified are:

**Primary Stakeholders:** Villagers and Water User Associations who stand to benefit most from the implementation of the MWSIP, specifically,

- Farmers accessibility to the canal system – Head Reach, Middle Reach and Tail Reach;
- Farmers income level – Rich Farmers, Middle Level, Poor
- Women
- Tribal
- Landless labourer
- Water User Association
- Panchayat Members
- Local Politicians
- Affected People

**Secondary Stakeholders:** Irrigation Department, which is the Implementing Agency and must undertake reforms within the department as envisaged in the project. They are also responsible for ensuring the incorporation of environmental and social issues and safeguard measures into the project activities. The NGOs and SHGs operating in the command areas are also the secondary stakeholders.

**Tertiary Stakeholders:** Other Sub Sector Water Users (such as agriculture department, revenue department, rural development department, rural water supply and sanitation department etc), who need to work in coordination with the ID as well as the primary stakeholders to ensure appropriate water allocation to their sectors and initiate parallel extension works to capitalise on opportunities created through the MWSIP

Based on the analysis of primary and secondary data and stakeholder consultations, following social and environmental issues emerged:

- More than 60 percent stakeholders are educated up to 10th standard of schooling. The literacy level among tribals and other vulnerable sections is less;
- In some projects, Water Users Associations (WUAs) are existing however their performance needs improvement;
- Committee members of WUAs are unaware of their rights and duties;
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- Capabilities of women not fully utilized in management;
- Farmers at Head reaches are powerful and play a dominant role in all decision making process of commands;
- Caste related issue are still dominant;
- Stakeholders feel that they are burdened with high water charges compared to the returns;
- There is willingness among stakeholders to pay according to assurance based supplies on volumetric basis;
- There is a lack of communication between the WUAs and the contributing departments;
- In general, there is a unsynchronized interaction among water resources “development” and “user” departments;
- There is an inadequate knowledge base towards implementation of new techniques on water and agriculture practices at the grass roots level;
- There is inadequate awareness at the grass roots level towards the new policies of the GoM in water sector;
- Monitoring and evaluation mechanisms are not effective;
- The communication and consultation mechanisms between service providers and beneficiaries are weak;
- There is a lack of business sense in managing water as an economic commodity;
- The Operation and Maintenance (O&M) cost is very high compared to the revenue collected;
- Human resources development mechanisms are weak for the new policy implementation at the project level;
- Unbalanced and excessive use of chemical fertilizers has lead to decrease in crop productivity.
- There is an alarming incidence of use of chemical pesticides leading to significant environmental degradation in many sub-project areas.

Based on the above, the various components proposed to be included in MWSIP were studied. The proposed four components in MWSIP are:

(i) Institutional Restructuring and Capacity Building;
(ii) Improve Irrigation Water Service Delivery and Management;
(iii) Improving Knowledge base of the Water Sector;
(iv) Project Management and Monitoring

ANALYSIS OF ALTERNATIVES

Keeping the context of the above components, an alternatives analysis was conducted at the strategic, planning, implementation, engineering and institutional levels. At the strategic level, the analysis considered the alternative of investments in new irrigation schemes as opposed to rehabilitation of the existing schemes. At the planning level, the alternatives of basin and sub-basin level planning were considered. At the engineering and technology level, it was considered whether the MWSIP should take up rehabilitation on a sequential or simultaneous basis for the multiple selected sub-schemes, and whether the canals should be lined or unlined. At the institutional level, the exercise considered the option of vesting the O&M responsibilities of the rehabilitated systems with the WUAs, as opposed to the Irrigation Department (ID).

The alternatives were analyzed in terms of pros and cons, considering a framework for sustainability, acceptability and ease of implementation. The feedback obtained through stakeholder consultation was considered in assessing the acceptability of the alternative. The preferred combination of alternatives was found to comprise the elements of rehabilitation of the existing system on specific single-sector projects, utilization of surface water with lined canal conveyance systems and vesting the O&M operation with the WUAs.

SOCIAL AND ENVIRONMENTAL MANAGEMENT FRAMEWORK (SEMF)

The SEMF is the road map to be followed by the PMU and their staff for incorporation of environmental and social safeguard measures into the main project planning, execution and operation. It lays down a step-by-step methodology for activities that have to be undertaken parallel to the engineering and institutional intervention measures of the main project. The proposed Project Implementation Plan (PIP) of MWSIP was reviewed...
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for an assessment of the scope and nature of the project interventions, during the various stages of the sub-project cycle. The SEMF was developed accordingly, to be applied to all the proposed sub-project activities throughout the sub-project cycle. The SEMF has been developed based on the findings of survey of 19 representative schemes, and may be modified based on the lessons learnt during the first year of the project.

The SEMF contains relevant formats and checklists which will be used to ensure that all relevant issues are addressed in each sub-project. It also contains strategies (comprising of action plans and recommendations) for various key issues like Resettlement and Rehabilitation, Gender, Communication, Tribal Development Sustainable Agriculture (including IPM, INM), Participation and Training and Outreach.

An impact evaluation showed that most of the activities in the implementation phase related to asset improvement will lead to short-term reversible impacts. For situations where moderate, long-term and negative impacts are anticipated, the SEMF proposes a two-tiered mitigation strategy.

A. Mitigation at activity level – Specific recommendations are given on how the activity should be performed with modifications/best practices, outlining allocation of responsibilities and needed monitoring measures. Activity-specific recommendations are provided for managing many of the direct social and environmental impacts. Further, recommendations at the activity level could be incorporated in the PIP and Operational Guidelines of the ID and transformed suitably in the construction/O&M contracts to ensure implementation.

B. Mitigation at programmatic level – Recommendations are given on developing/strengthening supportive programmes such as tribal development, sustainable agriculture, gender participation, etc. that would "envelop" the projects under MWSIP. A programmatic approach will address the long-term and second order social and environmental impacts and ensure both effectiveness and sustainability of the project. These
programmes will also assist in building needed institutional capacities and suggest reforms in the existing policy and regulatory framework.

**SEMF through sub-project cycle**

The SEMF prescribes specific measures for each stage of the sub-project cycle.

**Pre-planning Stage:** In the pre-planning stage, the SEMF activities comprise the following: assessment and updating of initial knowledge base; collection of baseline physical, social and environmental data for screening and prioritization of sub-projects; screening and prioritization leading to sub-project selection; sensitization and awareness in the selected sub-project areas; identification of key stakeholders and preliminary consultations leading to the identification of the main social and environmental issues; selection and prioritization of rehabilitation activities to be undertaken in the selected sub-projects; and identification of relevant social and environmental safeguard policies and development strategies.

Separate checklists have been prepared for SEMF activities pertaining to screening and prioritization of sub-projects and for the pre-planning stage SEMF activities for the selected sub-projects. Detailed forms have also been prepared to assist in the collection of physical, social and environmental data on the sub-projects. The application of the SEMF at the pre-planning stage includes completion of a form (FORM SC-3) specifically designed to identify the social and environmental issues and trigger the appropriate mitigation measures and development strategies/plans. The assignment of the responsibilities for the various tasks is detailed in the checklists. Monitoring indicators, in the form of completed forms, records of consultation, etc. as well as the expected outcomes from the application of the SEMF at this stage are specified in the report.

**Planning and Design Stage:** The SEMF activities in this stage include training and awareness-raising programs about the social and environmental aspects of the sub-project objectives; detailed consultations on the activity plans; formulation of short-term
and long-term social and environmental management plans as a component of the sub-project work-plan; consultations and feedback from the stakeholders on the sub-project work-plan; and finalization of the agreed work-plan. A checklist has been prepared to ensure the implementation of the SEMF activities for the planning and design stage of the sub-projects, along with the assignment of the responsibilities for the various tasks. The monitoring indicators for the successful completion of the SEMF activities include specific completed forms, records of stakeholder consultations and the feedback/revision process, allocation of funds for implementation of social and environmental management plans and names of officials/departments assigned the responsibilities for the various tasks mandated by the SEMF. The expected outcomes from the application of the SEMF at this stage are also specified in the report.

**Implementation Stage:** The primary focus of the SEMF activities at this stage is the implementation of agreed social and environmental management plans for each sub-project. Specifically, the SEMF activities comprise the following: award of contracts and procurement of materials and services required for the implementation of social and environmental management plans; monitoring of social and environmental parameters as identified in the work plan; and additional mitigation measures/modifications in the sub-project activities as indicated by the monitoring results. A checklist has been prepared to ensure the implementation of the SEMF activities, along with the assignment of the responsibilities for various tasks. The monitoring indicators for the successful completion of the SEMF activities include the documentation of complete results of social and environmental monitoring (before, during and after the implementation of the sub-project activities), list of additional mitigation measures if implemented, and a report on the results of the social and environmental mitigation measures. The expected outcomes from the application of the SEMF at this stage are also specified in the report. In order to ensure environmentally and socially sound execution of the physical rehabilitation works, a detailed set of guidelines has been prepared for implementation of various activities, to be followed in addition to those available in the standard construction engineering specifications and contracts issued by the various implementing agencies. The subjects covered under the guidelines include eco-sensitive construction management, managing nuisance related to physical works,
ensuring participation from affected sections of the villages, and sensitivity to pollution and public health aspects of activities, among others.

**Post-Implementation Stage:** The primary tasks in this stage are to monitor and assess the long-term impacts of the project interventions, and to draw lessons from the success and failures for the improvement of interventions in the subsequent sub-projects. The SEMF activities include impact monitoring of social and environmental aspects of sub-project interventions, incorporation of social and environmental data in the sub-project completion report, and training activities. Monitoring indicators, in the form of completed forms, records of consultation, etc. as well as the expected outcomes from the application of the SEMF at this stage are specified in the report. A comprehensive format has been developed for monitoring of social and environmental aspects of the sub-project interventions.

The following matrix presents a schematic diagram showing project activities, corresponding SEMF interventions and expected outcomes:
### Schematic Diagram of Project Activities, SEMF Interventions and Expected Outcomes

<table>
<thead>
<tr>
<th>Stages</th>
<th>Activities in Project</th>
<th>SEMF Activities</th>
<th>Outcomes</th>
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<tbody>
<tr>
<td>Pre-Planning</td>
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<tr>
<td>Database Management</td>
<td>Survey and Investigations</td>
<td>A. for screening and prioritization</td>
<td>Identification of sub-projects</td>
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<tr>
<td></td>
<td></td>
<td>• Assessment and Updating of initial knowledge base (secondary data)</td>
<td>Identification of stakeholders for each sub-project</td>
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<td></td>
<td></td>
<td>• Collection of baseline engineering, environmental and social data, through Screening Formats FORM-SC1 and FORM-SC2 (primary data)</td>
<td>Identification of social and environmental issues for each sub-project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Screening and prioritization of schemes, leading to scheme selection</td>
<td>Identification and prioritization of activities to be undertaken in each sub-project</td>
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<td></td>
<td></td>
<td>B. For SEMF activities for each selected sub-project</td>
<td>Identification of relevant safeguards and development strategies for each sub-project</td>
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<td>• Sensitization/awareness raising of ID sub-project staff and sample reconnaissance surveys in the selected sub-projects, along with WUA members/command area farmers and other line department officials</td>
<td>Enhanced awareness among the ID, WUAs/command area farmers and the other stakeholders resulting in active participation</td>
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<td></td>
<td></td>
<td>• Identification of key stakeholders in the selected sub-projects.</td>
<td>Also,</td>
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<td></td>
<td></td>
<td>• Sharing of information from FORM-SC1 and FORM-SC2 with the identified stakeholders</td>
<td>• Completed forms SC-1, SC-2 and SC-3</td>
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<td></td>
<td></td>
<td>• Preliminary consultations with identified stakeholders</td>
<td>• Records of stakeholder consultation/sensitization meetings</td>
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<td></td>
<td></td>
<td>• Based on feedback received during consultation meetings, prioritisation and selection of rehabilitation activities to be undertaken during the sub-project</td>
<td>• Agreed intervention measures for each sub project</td>
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<td>• List of triggered safeguard policies and development strategies</td>
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In addition the following Strategies/Actions Plans are also triggered:
- Dam Safety Plan;
- Sustainable Agriculture strategy covering IPM, INM;
- Flood/drainage management plan;
- Soil conservation plan;
- Ground water restoration plan;
- Pollution management plan;
- Silt disposal and utilization plan;
- Resettlement action plan;
- Tribal development plan;
- Gender Action Plan;
<table>
<thead>
<tr>
<th>Planning &amp; Design</th>
<th>Sensitization</th>
<th>Joint walkthrough surveys</th>
<th>Initial Plan and Estimate Preparation</th>
<th>Project Report</th>
<th>Technical and Economic Appraisal</th>
<th>Approval of Agreed Plans</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Training and awareness programme about sub-project objective</td>
<td>Inform stakeholders including line departments to ensure their participation in joint walkthrough</td>
<td>Joint walkthrough and detailed consultations on activity plan of the sub-project</td>
<td>Finalization of short term and long term social and environmental management plans keeping in view linkages between social and environmental issues with the proposed physical activities of the sub-project.</td>
<td>Formulation of the agreed work plan and estimates for the sub-project integrating social and environmental management plans</td>
<td>Incorporation of Chief Engineer's comments in the work plan.</td>
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<td></td>
<td>Chiefs Engineer of government and other agencies</td>
<td>Stakeholders, including line departments</td>
<td>Chief Engineer</td>
<td>Stakeholders</td>
<td>Work Plan Committee</td>
<td>PMU</td>
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<td></td>
<td>Stakeholders</td>
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<td>Stakeholders</td>
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Formulation of sub-project work plan that is finalized through stakeholder consultation and integrates social and environmental management plans

Budgets for implementation of social and environmental management plans

MoU between WUA and ID on the operation and maintenance of the sub-project

Also,

- Completed form P-1
- Records of stakeholder consultation meetings
- Records of revision to the work plan as suggested by CE and stakeholders
- Allocation of funds for implementation of social and environmental management plans
- Names of officials (with departments) assigned the responsibilities for implementation of social and environmental management plans
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<table>
<thead>
<tr>
<th>Implementation</th>
<th>Award of Contracts</th>
<th>Contract Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Execution and Supervision</td>
<td>Quality Control</td>
<td>Procurement documents, procedures followed and contracts awarded &amp; equipment procured</td>
</tr>
<tr>
<td>Monitoring and compilation of data on social and environmental parameters</td>
<td>Enhanced relationship among the ID, WUAs/ command area farmers and the other stakeholders resulting in active participation in the sub-project implementation Also,</td>
<td></td>
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</tbody>
</table>

#### Post implementation

<table>
<thead>
<tr>
<th>Monitoring and Evaluation</th>
<th>Implementation Completion Report (ICR)</th>
<th>Training for activities following post implementation stage</th>
</tr>
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<tbody>
<tr>
<td>The impacts of implementation of the sub-project on social and environmental conditions in the area will be monitored (refer to FORM PI-1, checklist provided in Table 7.6) and documented. Report on lessons learnt that will be used to improve the provisions made for future sub-projects.</td>
<td>Incorporation of social and environmental data (FORM PI-1) in the sub-project completion report</td>
<td>Training to WUAs, Staff involved in O&amp;M, book-keeping, marketing, etc and sharing experience and lessons learned from the implementation experience.</td>
</tr>
<tr>
<td>Completion of sub project activities in conformity with SEMF</td>
<td>Also,</td>
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</table>

Compliance of SEMF provisions has to be ensured through third party monitoring for verification of the sub-project completion report. The proposed SEMF will need to be adapted based on the lessons learned during monitoring and assessment. The following figure describes the evolution and structure of the SEMF:
Specific Strategies and Development Plans

Based on the social and environmental issues identified and feedback received from consultations the following framework/strategies have been prepared.

a. Resettlement and rehabilitation entitlement framework
b. Tribal development strategy
c. Gender development strategy
d. Communication strategy
e. Participation strategy
f. Sustainable agriculture development strategy

These strategies have been briefly discussed below.
Resettlement and Rehabilitation (R&R) Entitlement Framework:

Under MWSIP, no new or on-going schemes are included and the proposed interventions at individual sub-project mainly relate to rehabilitation of existing structures to improve their efficiency in water delivery. No land appropriation is envisaged and the project thus does not involve physical resettlement though there may be encroachment in project areas. However, most of the encroachment fall out side the project activity area and therefore, will not be disturbed. However, in order to address adverse impacts, if any during the course of the project, an R&R Entitlement Framework has been prepared which gives base to plan mitigation at individual affected families. This framework has been developed taking into account the provisions of the Maharashtra Project Affected Persons Rehabilitation (MPAPR) Act, 2001, the National Policy on Resettlement and Rehabilitation for Project Affected Families (NPRRPAF), 2003 and the experience of implementing R&R policy of Mumbai Urban Transport Project besides the feedback received during the consultation workshops held as part of ISEA study carried out as part of project preparation.

The R&R entitlement framework recognizes all affected people irrespective of their ownership of land and other assets. Besides compensation for land and other assets, affected people will receive support for their relocation (if physically displace) and economic rehabilitation. As part of economic rehabilitation package, the project will offer the following support: to the affected people to regain their economic livelihood.

i) Skill training for income generating activity

ii) Productive Asset Grant (up to Rs 25,000) for taking up Income Generation (IG) Activity. This will be given only in time as productive asset

iii) Access to institutional credit and government schemes for IG activities

iv) Support from district industries center

v) Institutional credit for crop production and allied activities
vi) Affected families in the project area will be given preference to carry out the works related wage employment during the process of system rehabilitation.

vii) In the absence of any traditional fishing community in the project area, fishing rights will be given on priority basis to the project affected families.

Following basic principles will guide addressing R&R issues under MWSIP:

i) The project does not envisage acquisition of any private land for the proposed project interventions, however, if any exigencies arise, compensation will be at replacement value.

ii) Encroachers not affected by the proposed project activities will not be disturbed. Encroachers who are adversely affected will get support under the project to mitigate the loss.

iii) All efforts will be made to encourage encroachers to voluntarily surrender encroached lands (required for project interventions) but no will be forced out.

iv) The affected community or families will be consulted throughout the design, planning, implementation and monitoring of the R&R activities.

v) All those displaced will be socially and economically integrated with the local or host population.

vi) Adequate resources including physical, financial, and human will be made available to implement R & R activities under the project.

vii) Common pool resources, if affected, shall be replaced in consultation with the local community, especially keeping in mind the needs of the poor, and the vulnerable sections of the community.

Resettlement Action Plan (RAP) process will follow the project cycle stages. In accordance with the SEMF prepared to integrate Environmental and Social Safeguard measures, all sub projects shall be screened for their likely adverse impacts, in the Pre-Planning Stage. If issues related to resettlement are triggered, an RAP will be prepared for that specific sub project at the Planning and Design Stage itself when specific physical interventions are planned. Consultations with affected community is a precondition to prepare any mitigation measures. These consultations will continue while implementing the R & R activities in the project area.
Both at the state level (in the Project Management Unit), and at the basin level, the Social Development Specialists will be responsible for guiding and supervising the preparation and implementation of resettlement plans. At the sub-project level involving RAP, an Assistant Engineer will be assigned the responsibility of implementing RAP. Where ever suitable NGOs are available, they will be engaged to facilitate the preparation and implementation of RAP. Farmers organization at different (outlet, distributary and project) levels will provide the first base to resolve any grievances faced by affected people and at the same time they will have access to the District Level Grievance Committee which is headed by the District Collector. In addition, the project/ID staff will also be responsible to address grievances of the affected people.

RAP will form an integral part of the sub-project Plan and its implementation will be synchronized with other project interventions at WUA level. All cost of resettlement activities will be met from the sub-project level cost. Detailed R&R cost estimates will be developed based on the proposed mitigation measures and will be included in the project cost at the sub-project level.

Tribal Development (TD) Strategy

In the Indian context, indigenous people are categorized as tribal. In Maharashtra, nearly one-tenth of the state’s population is constituted by tribal groups and are mostly concentrated in 12 of the 35 districts in the state and MWSIP covers 6 of these 12 tribal districts: Ahemdnagar, Thane, Nanded, Jalgaon, Amaravati, and Gadchiroli. In the tribal districts, there are 24 sub plan areas served by 24 Integrated Tribal Development Projects where tribal constitute nearly 50%. Nearly 85 percent of the tribal population is engaged in Agriculture and 40 percent of them are in farming and 45 Percent are in agricultural wage earning. These two economic activities contribute almost 80% of the household income. Therefore, the mainstay of the tribal economy is still agriculture and allied occupations but the tribal agriculture is characterized by low technology and low input resources and the farm returns are low. Moreover, irrigation facilities in the tribal areas are also extremely limited.
Tribal often become vulnerable in development projects due to their socio-economic disadvantages. Most often, these groups are unable to participate in the development process on an equal footing with the rest in the community, nor able to reap a fair share of the benefits of developmental projects. There are a number of constitutional and policy provisions aimed at safeguarding the socio-economic and political interests of the tribal groups. In addition, the government both at the center and the state have formulated a number of programs for the development. Taking into account the constitutional and policy safeguards and the tribal development schemes, the assessment of the field level situation in the sub-project areas and consultations with the stakeholders, the project has prepared a strategy to ensure implementation mechanism to dovetail such development programs for the benefits of tribal in sub-project areas. However, the focus will be on issues that are directly related to the tribal involvement in project activities and to help them access project benefits. The main objectives of the tribal development strategy are, therefore, to minimize any negative impacts like creating further sources of social and economic imbalances between communities and to ensure that the tribal groups are actively involved in the project activities and they have access to project benefits at par with the rest of the community. For this purpose, the project provides for revolving fund to support tribal groups to enhance agricultural productivity with improved irrigation delivery system and to contribute to their livelihood. Tribal Development Plan (TDP) will form an integral part of the sub-project Plan and its implementation will be synchronized with other project interventions at WUA level. Strategy for implementing TDP under the MWSIP is to work in close association with the existing TD agencies duly supplementing their efforts with project initiatives. A model TDP has been prepared for one of the sub-projects with significant tribal population and also demonstrate the application of SEMF to address tribal issues.

**Gender Development Strategy**

The Government of India, through the 73rd and 74th Constitutional amendments, took a landmark decision to provide one-third reservation for women at all levels in rural and
urban. Besides, various development programs are implemented in the state where women are encouraged to avail them. However, very few attempts have been made to analyze gender issues in relation to irrigation management and to mainstream gender concerns into the project planning and implementation. Keeping this in view, during the conduction of ISEA, an attempt was made to review programs on women development and to hold wide ranging consultations with women groups in order to identify gender issues that are relevant to the proposed project and to formulate measures to enhance their participation and access to project benefits along with others.

There is hardly any involvement of local population in the planning and construction of irrigation projects, not to speak of women except of course wage employment during construction activities. This is expected to be addressed under the Participatory Irrigation Management (PIM), the main focus of the proposed project. As per the draft Rules of the MMISF Act, 2003, one of the memberships of WUA’s executive committee is reserved for a women WUA member and it is also envisaged that the woman executive committee member in rotation will become its Chairperson.

Some of the important observations that emerged during discussion with women groups in command areas are:

- Few women hold land and other productive assets.
- Discrepancy exists in the daily wages paid to women laborers compared to men.
- With the development of irrigation projects, there are not many common properties like Gayran (Grassland) left to graze cattle, goats, etc and to collect fuel wood. This has affected poor people, particularly women.
- Water is an essential commodity and women beneficiaries are well aware of its importance and are interested to actively participate in its management.
- Women are positive to the proposed project interventions and expect it would increase the quantity and timely availability of water from canals and would lessen their hardships in the fields.
- Women expect that the project would improve the drinking water situation and in turn reduce the productive time spent in fetching drinking water from far off places.
The women wage earners expect that the construction activities under the project would open up employment opportunities to them.

Recognizing that the MWSIP will not be in a position to address all issues and concerns of women, the approach adopted is to focus on gender issues that are specific to the project so as to ensure that the women of the project areas get benefits from the project activities. This would require gender specific activities to alleviate the existing differential access to project benefits and to ensure that women become real partners of proposed development activities. Therefore, the gender development strategy formulated for the project focuses on women issues and entails concerted efforts required to dovetail existing relevant government programs for the socio-economic benefit of women members. Involvement of women groups in the identification of impacts and opportunities through sub-project activities will form the basis for preparation of gender sensitive sub-project activities. The project provides funds for supporting self help groups to encourage to take up activities to enhance projects benefits to them and to contribute to their livelihood.

Activities under gender action program will necessarily have effective participation, cooperation and involvement of project staff both in planning and executing gender specific suitable action plans. In case of any grievances regarding the gender action plan the WUA women members may approach the Distributory / Project committee and ID staff at Project, Basin and Project Management Unit (PMU) levels besides taking the help of facilitating NGOs.

Communication Strategy

The field observations and the deed back from group discussions and consultations indicate that the exchange of information between different stakeholders is hindered by several factors including cultural differences, wide variation in literacy and educational level, communication barrier particularly in tribal areas due to local dialects, insufficient infrastructure, in-appropriate selection of priorities in information program formulation, organizational problems, bureaucratic procedures, high cost of information and communication services and above all lack of funds. While a broad communication
strategy has been prepared for the project, it is envisaged that a consultant is engaged during project implementation to make an assessment of communication requirements, develop a detailed strategy for communication and also prepare communication material that could be used during project implementation. Meanwhile, it is strongly suggested that GoM initiates, on priority basis, an awareness campaign for dissemination of information of the project to the potential beneficiaries. This will help establish good relationship with project stakeholders and opens up channels of communication with them. Effective communication is essential for the participation of the community and WUA and the existing informal communication channels developed by ID in the State could also be utilized for consultations and to get feedback from the community on their priorities. With the introduction of newly enacted Ordinance on Maharashtra Management of Irrigation Systems by Farmers (MMISF) Act, 2003, and other Acts, the need is to disseminate their contents on extensive level making use of all the modes of communications. For this purpose, the relevant Acts and policies should be translated in local language and copies are made available to project stakeholders.

**Strategy for Participation**

Participation is a process through which stakeholders influence and share control over development initiatives and the decisions and resources which affect them. Participation helps to generate awareness, enhance knowledge and allows the stakeholders to come out with solutions to the problems and alternatives for better results. The MWSIP, through promoting participatory irrigation management relies heavily on the active participation of the command area farmers and others for the successful achievement of project objectives. During discussion and consultation with the project stakeholders, a number of issues emerged as constraints to their participation in the activities undertaken by ID. Keeping in view the constraints and in order to ensure active participation of all stakeholders in the project, the following strategy will be implemented under MWSIP:

- Promoting participatory irrigation management
- Implementing MMIFS Act
- Formation of water users organizations
- Planning and implementation by WUAs
• Involvement of NGOs
• IEC, training and capacity building
• Participatory monitoring
• Grievance redress mechanism

In order that the participation is effective, consultations should always be two-way process between the facilitators and the consultative groups and it should be informed consultation so that the stakeholders take active participation in the discussions, planning and implementing project activities. It is important to ensure that group composition is as per the purpose of consultations. Usage of local language is highly recommended and the resource persons involved for the conduction of consultation should be aware of local conditions and psychologies.

Sustainable agriculture development strategy

Keeping in view the increasing concerns about the sustainability of the agricultural resource base in Maharashtra and the MWSIP objective of improving the overall efficiency of the irrigated sector, a Sustainable Agriculture Strategy has been drawn for the project. The Strategy would be supported by the Agricultural Services Support component of the MWSIP, and encompasses the elements of crop planning, balanced use of nutrients and use of organic fertilizers, minimizing the use of toxic agricultural chemicals, improvement of extension services, etc. Thus, the elements of Integrated Pest Management (IPM) and Integrated Nutrient Management (INM) are incorporated in the Sustainable Agriculture Strategy. Specific plans would be designed for the command areas of the rehabilitated irrigation schemes, and would be implemented by the Department of Agriculture, in cooperation with other departments and agencies.

APPLICATION OF SEMF

The SEMF is applicable to all the proposed sub-project activities through various stages of the sub-project cycle: pre-planning stage, planning and design stage, implementation
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stage and post-implementation stage. The designed flow of SEMF activities is coordinated and integrated with the sub-project cycle. In addition, the mainstreaming of social and environmental aspects will be achieved through:

a. Incorporation of activity specific recommendations in the Operational Guidelines of ID/PIP;
b. Development and/or strengthening of supportive programmes in the areas of tribal development, sustainable agriculture, gender analysis, monitoring and evaluation, resettlement and rehabilitation, etc.;
c. Prioritization of sub-projects to be done based on integrated considerations using impact assessment matrix and scoring methods proposed in the ISEA study;
d. Setting of a monitoring and learning cell at the ID specifically for management of environmental and social issues;
e. Training and capacity building on environmental and social management at ID and key institutions. This may entail provision of equipment at laboratories, provision of computer hardware and information systems;
f. Supporting ID with a budget for engaging consultants for technical assistance, especially for operation and/or evaluation of programmes;
g. Support for research, conducting of pilots and demonstration projects;
h. Development of a communication /dissemination strategy, creation of awareness modules, etc.

Application of SEMF for pre-planning stage: The SEMF was applied to the 19 representative sub-projects for the pre-planning stage for which a preliminary social and environmental assessment of all the representative sub-projects was carried out. This was done through field visits, stakeholder interviews and analyses of relevant secondary data. The framework for sub-project prioritization included assessment of physical status
as well as social and environmental issues. The prioritization of schemes was attempted to identify sub-projects that have major deficiencies in the physical assets and could contribute significantly to the improvement in the water efficiency and improvement in the social and environmental conditions. For all the selected schemes, the scoring was done (between 1 to 3) using 11 key social and environmental attributes selected based on the identification of social and environmental issues and if the score of any sub-project is in the range of 16 to 28, then the sub-project is considered as in urgent need of rehabilitation. Applying this approach, the sub-project with highest combined score was assigned the highest priority (in the sample it was the Pench sub-project) while lowest priority was attached to sub-project with lowest combined score (in the sample it was Kanholi sub-project). This exercise should be carried out for all the schemes coming under MWSIP for fix up their priority for implementation. Once the priority of projects is fixed, SEMF activities described in the earlier section will be carried out covering stages such as planning, implementation and monitoring.

**Application of screening guidelines for addressing social and environmental issues**: In order to illustrate application of SEMF in identifying triggers that need to be considered in formulation of social and environmental management plans, three of the 19 representative sub-projects were studied in more details. The three sub-projects considered were Kukadi, Panzara and Raitale. For this purpose, relevant screening guidelines (FORM SC-3 described under SEMF) was used for each of the three sub-projects. While for all the three sub-projects, there are no major social and environmental issues, the utility of FORM SC-3 is evident in identification of triggers as relevant. The checklist for instance recommends preparation of dam safety plans for all the three sub-projects, whereas a tribal development plan is recommended in the case of Raitale. FORM SC-3 could thus be effectively used to scope the planning stage and identify critical actions that need to be undertaken in formulation of social and environmental management plans. Based on the application of SEMF to three sub-projects, it was observed that there are no significant adverse social and environmental impacts of the proposed project interventions and issues that may arise during project construction will be appropriately be addressed and managed. However, in one of the sub-projects (Raitale) significant tribal population was observed and a tribal development plan has been prepare with an aim to enhance participation of the tribal groups in the project activities and to ensure that they access project benefits at par with others. This plan will serve as a Model Tribal Development Plan for the implementing agency to follow in sub-projects which may have significant tribal people among primary command area farmers.
Institutional aspects: A review of the existing policy framework reveals a need for establishing and strengthening the capacity to address social and environmental safeguards in the water sector and irrigation sub-sector for which the following actions are recommended:

- Formulation of a state policy for social and environmental protection and management;
- Formulation and implementation of a state-wide policy for control of pollution from agricultural activities. Presently, the Pollution Control Boards (both at the center and the state level) have focus on control and abatement of industrial pollution and not on agricultural activities;
- Development of a training policy for water users as well as for various line departments;
- Development of a policy to ensure mandatory requirement for GoM departments to develop, support, monitor and implement social and environmental management and mitigation plans and to ensure regular information exchange with proposed social and environmental cells, and the Directorate of Environment.
- Development of appropriate linkages with actions proposed under MWRRA and those under MWSIP to reduce overlaps and take advantage of the synergy.

Institutional Analysis: In order to develop required institutional structure, allocation of responsibilities and identification of capacity building needs, an institutional analyses has been carried out. Presently, the capacity to deal with social and environmental aspects for various components of project development and implementation in GoM is either not existing or it is poorly developed. This suggests an urgent need for the institutional strengthening at various levels specifically for the following:

- Data handling and decisions support system
- Monitoring and evaluation
- Awareness development both among implementing agencies and the beneficiaries
- Capacity building of ID at various levels – state, basin and projects
- Conflict resolution
- Specialized support
Monitoring

It is recommended that the SEMF with its formats be computerized to ensure seamless operation of the checklists and to serve as a repository of data for further analyses and learning. Costs of establishing such an information system will be met from the budget under the project sub-component of Water Resources Management Information System. The water users organizations will not only plan and implement project activities at their level, but they will also be involved in the monitoring of the implementation of agreed work plan. This will be done through participatory monitoring by the water users organizations.

Grievance redress mechanism: MMSIF Act provides for addressing the grievances of command area farmers and other stakeholders. While grievances by members within WUA will be addressed by the management committee of WUA, conflicts between WUAs will be resolved by the distributary level committee and the conflicts among the distributaries are settled by the Project Level Committee. The state level Steering Committee will address the policy issues including inter basin conflicts. These arrangements are in addition to the ID staff available at different levels - project, basin and state level. NGOs will also play an important role both in resolving the issues at the local level itself and also to take up the unresolved issues at a higher level and with ID and other line departments for their resolution.

Budget

A budget for all such activities for the entire duration of the project has been worked out, totaling Rs. 240.80 million, with details on assumptions made. In addition to this budget, expenditure on sustainable agriculture will have to be taken from the sub-component of Agricultural Support under MWSIP. This component will also support costs of demonstration projects and related testing.