

Extension Renovation and Modernization (ERM) of Grand Anicut (GA) Canal System Project Water Resources Department Government of Tamil Nadu





ESDDR on Implementation of Environmental and Social Management Plan (ESMP)

(Draft Report)



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Executive Summary

Executive Summary the Environmental and Social Due Diligence Report for the Extension, Renovation, and Modernization (ERM) of the Grand Anicut Canal System (GACS)Project:

Project Overview:

The Grand Anicut Canal System (GACs) comprises the GA Main Canal, with a length of 148.65 km, and an extensive network of branch channels approximately 1232 km, including laterals. The Main Canal traverses three administrative districts in Tamil Nadu, India: Tiruchirappalli (5 km), Thanjavur (104 km), and Pudukkottai (39.65 km). The Water Resources Department (WRD), Government of Tamil Nadu, has identified the need for the reconstruction, rehabilitation, repair, and new components of the GACS to ensure equitable water distribution, hydraulic profile maintenance, and discharge control. Five out of sixteen packages were awarded to contractors during year 2020 to 2021, which are currently under implementation. The location, progress and scope of works are described in the table 1 below

Table 1: Details of the location, progress and scope of works for the ongoing packages

S No.	Package No.	Name of Work	Work Progress
1	Package 1	Rehabilitation of Irrigation Infrastructures in G.A. Main Canal L.S. from 0.000 km to 12.624 km. and G.A. No.1A Channel, G.A. No.1 Rear Channel, GA. No. 1B Rear Channel with Feeding Tanks in Budalur Taluk of Thanjavur District.	63%
2	Package 2	Rehabilitation of Irrigation Infrastructures in G.A. Main Canal L.S From 12.624 km to 30.430 km, G.A. No.2 rear Channel, GA. No.3 channels and Chakkara Branch channels with feeding tanks in Budalur And Thanjavur Taluks of Thanjavur District.	67%
3	Package 3	Rehabilitation of Irrigation Infra structures In G.A. Main canal L.S from 30.430 km to 45.290 km and G.A No.4 channel, G.A no.5 channel, G.A N0.5A, Rear Channel, and Neivasal Thenpathy Branch channels with feeding Tanks in Papanasam and Orathanadu Taluk Of Thanjavur District.	73%



S No.	Package No.	Name of Work	Work Progress
4	Package 4	Rehabilitation of Irrigation Infrastructure in G.A. Main Canal L.S. from 45.290 Km. to 58.650 Km., V.T. Channel , G.A.No.6 Channel, G.A. No. 7 Channel, G.A.No. 8 Channel, G.A No.8 Rear Channel, and Kalyanaodai Branch Canal L.S. from 0.000 Km. to 13.000 Km, Kulamangalam main Channel, Paruthikkottai Channel, Melavannipattu Channel with Feeding Tanks in Thanjavur, Papanasam, OrathanaduTaluks of Thanjavur District.	57%
5	Package 8	Rehabilitation of Irrigation infrastructures in G.A Main canal from LS 58.650 km to 92.200 km Akkaravattam Main channel, Alivalam channel, Neduvikottai channel, G.A.No.13 channel and G.A. No.14 channel with feeding tanks in Orathanadu and Pattukkottai taluks of Thanjavur District and Karambakudi taluk of Pudukkottai District.	50%

An Environmental and Social Due Diligence (ESDD) was therefore undertaken by WAPCOS (a Government of India enterprise under the Ministry of Jal Shakti) to verify whether the environmental and social management of the tendered packages are in compliance with Asian Infrastructure Investment Bank (AIIB)'s Environmental and Social Policy (ESP).

Key Findings

The awarded contractors' key environmental and social management personnels (e.g. Environmental Specialist, Social Development Officer and Health and Safety Officer) of ongoing 5 packages were aware of implementing environmental and social management measures during construction. The contractors submitted environmental and social management plans (ESMPs) for their respective packages and carried out the activities as per the ESMPs.

Under Environmental Monitoring component, the tests on the quality of air, water, noise and soil were conducted and ensured that suitable mitigation measures were in place without negatively affecting the environment.

Under Social component, the community and workers were sensitized on social awareness and health awareness programs and assured that the health and social safety of both workers and community ensured.

Stakeholder consultations:

ESMPs implementation involves constant engagement with stakeholders including regular consultations, awareness programs and grievance redressal process. The consultations focused on opinions and perspectives of the farmers and other stakeholders about the GAC

ESDDR for Extension Renovation and Modernization (ERM) of Grand Anicut (GA) Canal System Project

system how it is working, issues and concerns of the farmers, their needs related to GAC and agriculture practices.

Grievance Redress Mechanism:

GRM boards were installed at all 5 package sites and PIU offices. GRM boxes are also placed accessible to public and workers separately. The grievances received were registered and tracked.



BACKGROUND

Introduction

This report is about the ESDDR on Implementation of Environmental and Social Management Plan (ESMP) in the ongoing 5 Packages of ERM of GA Canal Project, which were commenced by WRD in advance i.e., prior to AIIB Loan approval.

WRD has proposed to implement the ERM works of GA Canal system in 15 nos. of Packages. WRD, GoTN has sanctioned for an amount of Rs. Rs.2639.15 Crores. by adopting funding pattern as 70% by AIIB and 30% from Sate Government. Accordingly, the Government of Tamil Nadu has accorded Administrative Sanction of Rs.1036.70 Crs vide GO (Ms) NO:282 dt.13.11.2020 for the 5 packages.

Subsequently, works for the following five packages were taken-up by WRD, GoTN in advance i.e. prior to AIIB Loan approval by awarding it to the various Agencies during FY 2020-2021. The works are now in progress at various stages and the details of each package is given at Annexure -1.

ESDDR

WRD had already awarded five contracts which are under implementation and requested the AIIB to consider these five contracts also for its financing. In the Aide Memoire of Mission Visit of August 3-5, 2022, it has been mentioned that the bank will conduct its review of the contracts awarded, especially from procurement and E&S perspectives for the purpose of financing the five ongoing contracts.

Further, it has been mentioned that AIIB Mission during the visit, observed that the prepared draft ESIA report by WAPCOS during 2020 -2021 comprised 15 packages, in which 5 packages have already been awarded and the contractors have been appointed.

In view of this, it has been suggested to submit an ESDDR to the draft ESIA for the construction works awarded packages. It was suggested to highlight the approach adopted for the environmental safeguard implementation including the compliance to the regulatory requirements, suitable safeguard clauses in the Bid document (under the General conditions and specific conditions), and ESMP.

In view of the above, this report called ESDDR to the draft ESIA report is prepared and the report shall consist of the following:

- About Grand Anicut Canal System
- ii. Need for Modernization of the Canal system
- iii. Components proposed for Rehabilitation /Modernisation under ERM



- iv. Details /Status of Work Packages already awarded /under Implementation
- v. Status of Environmental and Social Management Plan (ESMP) in ongoing packages

1. Grand Anicut Canal System

The Grand Anicut Canal is fully designed and excavated as a modern canal to meet the requirement of irrigation supplies for the Ayacut all along its course. It is traced and aligned as a contour canal carrying only the designed discharges with all the local drainages totally excluded through cross drainage structures. There are a number of fairly large and important drainage courses crossing the canal that also serve as natural drainages for the Ayacut.

The Grand Anicut canal takes off from the Grand Anicut head on the right side of the Cauvery immediately above the right flank of the Vennar Regulator. The head sluice of the canal which also carries a road over it consists of 6 Vents each of 30 feet width fitted with radial shutters, and operated through electrical motors. Work on the canal system was started in 1926 and completed by 1935.

The canal is designed for an ayacut of 2,56,000 acres requiring a full supply discharge of 3500 Cusecs at a duty of 73. However, for purposes of flushing and for filling up tanks when supplies are available, the canal is designed to provide for a maximum supply of 4100 Cusecs, or 600 Cusecs in excess of the full supply discharge.

The bed width of the canal at head is 54.860 m or 180 feet with F.S depth of 2.135 m or 7ft. the capacity of the canal is gradually reduced to suit the ayacut to be served.

The bed fall however is gradually increased from 0.15 / 1000 at the head reaches to 0.25 / 1000 at the tail end to keep the velocities as high as practicable. The canal is 67.83 (109.160 Km) miles in length from head to RD 35 / 81, where it takes the name as Grand Anicut extension channel and beyond this as Narasinga Cauvery Extension, (New Main Channel). The left bank of the canal is maintained throughout to serve as a bank road Motorable in fair weather for inspection by officers.

The canal passes through the Thanjavur Town in cutting which practically begins at RD 12 / 9899 and extends to RD 14 / 8865, a distance of nearly 4 miles. The approach to the town is in deep cutting (26 feet) but through the Town itself the depth of cutting is such as to keep to of the canal within the town has been protected with revetment. Full supply level as far as possible below ground level. The canal in this reach is taken with reduced bed width of 80 feet and full supply depth of 10 feet by suitably increasing the slope of the canal with suitable transitions. As a protective measure against scour, the whole course

The Kalyanaodai branch, which is the largest branch of the canal, with an ayacut of 68524.75 acres, takes off at RD 16/0172, with a head sluice of 9 vents of 7'-5" x 4'. The Rajamadam



branch channel is the second largest branch, which takes off from the canal at RD 19/2408 and feeds an ayacut of 23212.96 acres.

The Canal runs in embankment in the following reaches.

No.	Name of Embankment	Length	Maximum Height	Average Height
110.	Name of Embankment	(ft)		
1	Vettikkadu	10250	30	20
2	Thattankulam	3000	21	12
3	Agniyar	7200	15	6

In its course, along the alignment, the Grand Anicut Canal intercepts a right-side catchment of 780 Sq. miles, which can create a combined potential flood of over 80000 Cusecs. The streams crossed vary in size from quite insignificant ones to big streams like Agniyar, which is capable of carrying a discharge as high as 58300 Cusecs. The most practicable and necessary alternative of crossing the drainages was to exclude the water in cross drainages altogether by means of aqueducts. Forty-three such cross drainage works (aqueducts, Syphon aqueducts / Siphons) have been constructed in the course of the canal. By this means, the design of the canal has been much simplified, as its capacity at any point is restricted to the requirements of irrigation alone.

All the head sluices of the branch canals, channels and distributaries taking off from the canal are provided with screw gearing shutters for regulation and are designed to carry the F.S.L discharge even when the canal carries half supply discharges.

The main canal is 92.37 miles (148.654 Km) in length with the branches and distributaries running for 618.05 miles (994.662 Km).

Tanks in the System and their Condition

The Grand Anicut Canal system supplements the storage in 694 Nos. of system tanks. They are located, both in Thanjavur and Pudukkottai districts, 524 in Thanjavur and 170 Nos. in Pudukottai. The total ayacut under system tanks is 81944 acres. These tanks are getting filled only during North East monsoon period. Nearly one third of the tank storage is fed by G.A. Canal and two third is getting filled up from their own catchment rainfall. The tanks were wisely included in the system while the project was implemented. Invariably the structural components of all the tanks are highly in dilapidated condition which warrants rehabilitation. The banks are also not in good condition and these banks are to be standardized.



4.Details /Status of Work Packages already awarded /under Implementation

The following five packages were taken-up by WRD, GoTN in advance by awarding it to the various Agencies during FY 2020-2021. The works are now in progress at various stages and the details of each package is given in table

TABLE 2: List of packages taken up in advance

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S No.	Package No.	Name of Work		
1	Package 1	Rehabilitation of Irrigation Infrrastructures in G.A. Main Canal L.S. from 0.000 km to 12.624 km. and G.A. No.1A Channel, G.A. No.1 Rear Channel, GA. No. 1B Rear Channel with Feeding Tanks in Budalur Taluk of Thanjavur District.		
2	Package 2	Rehabilitation of Irrigation Infrastructures in G.A. Main Canal L.S From 12.624 km to 30.430 km, G.A. No.2 rear Channel, GA. No.3 channels and Chakkara Branch channels with feeding tanks in Budalur And Thanjavur Taluks of Thanjavur District.		
3	Package 3	Rehabilitation of Irrigation Infra structures In G.A. Main canal L.S from 30.430 km to 45.290 km and G.A No.4 channel, G.A no.5 channel, G.A N0.5A, Rear Channel, and NeivasalThenpathy Branch channels with feeding Tanks in Papanasam and OrathanaduTaluk Of Thanjavur District.		
4	Package 4	Rehabilitation of Irrigation Infrastructure in G.A.Main Canal L.S. from 45.290 Km. to 58.650 Km., V.T.Channel , G.A.No.6 Channel, G.A.No. 7 Channel, G.A.No. 8 Channel, G.A No.8 Rear Channel, and Kalyanaodai Branch Canal L.S. from 0.000 Km. to 13.000 Km, Kulamangalam main Channel, Paruthikkottai Channel, Melavannipattu Channel with Feeding Tanks in Thanjavur, Papanasam, OrathanaduTaluks of Thanjavur District.		
5	Package 8	Rehabilitation of Irrigation infrastructures in G.A Main canal from LS 58.650 km to 92.200 km Akkaravattam Main channel, Alivalam channel, Neduvikottai channel, G.A.No.13 channel and G.A. No.14 channel with feeding tanks in orathanadu and Pattukkottai taluks of Thanjavur District and Karambakudi taluk of Pudukkottai District.		



STATUS OF ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP)

PACKAGE - 1: ERM - GAC PACKAGE NO:1 FROM LS 0.000 KM TO 12.624 KM.

Contract Agreement Value: Rs.161.52 Crs

The Following are the provision made in the Contract Agreement.

- Lining of GA Main Canal to a length of 11.02Km. and branch Canal of 10.50 Km.
- Renovation of syphon (3 Nos) in main canal, and 4 Nos of well syphon in branch canal.
- Renovation of 9 Nos Sluices in main canal, and Construction of IA Quarters building 1Nos. and Formation of Bituminous Road to a length of 11.00Km. in the left bank of canal.
- Canal bank strengthening to a length of 11.02 Km.
- Construction of 27 Nos. ramps and steps for Bathing, Cattle feeding and Communal usage.
- Construction of Silt trap and Canal Escape.
- Provision is made in the estimate for shifting of EB Post, tree plantation to meet out
 the environmental aspects and Name Board Sign board etc., for Health and Safety
 aspects.

Progress Details:

The progress of work of this package is 63% (both physical and financial). The balance works are in progress. The detailed physical Progress of works are given at Annexure 1.

Status of Environmental and Social Management Plan (ESMP)

The Status of implementation of Environmental and Social Management Plan has been ascertained through field visits/inspections, etc. and the details are given in the paragraphs given in section 5.



PACKAGE - 2: ERM - GAC PACKAGE NO:2 FROM LS 12.624 KM TO 30.430 KM.

Contract Agreement Value: Rs.178.99Crs

The Following are the provision made in the Contract Agreement:

- Lining of GA Main Canal to a length of 13.03 Km.
- Renovation of Regulator 1 Nos and syphon 3 Nos in main canal.
- Construction of IA Quarters building 1Nos, AE Quarters building 1Nos and Section
 Office building
- 1Nos. Formation of Bituminous Road to a length of 11.49 Km. in the left bank of canal. and Canal bank strengthening to a length of 13.03 Km.
- Provision is made for Silt trap1 Nos in the main canal.
- Provision is made in the estimate for shifting of EB Post, tree plantation to meet out
 the environmental aspects and Name Board Sign board etc., for Health and Safety
 aspects.

Progress Details:

The progress of work of this package is 67% (both physical and financial). The balance works are in progress.

Status of Environmental and Social Management Plan (ESMP)

The Status of implementation of Environmental and Social Management Plan has been ascertained through field visits/inspections, etc. and the details are given in the paragraphs in section 5.



PACKAGE - 3: ERM - GAC PACKAGE NO:3 FROM LS 30.430 KM TO 45.290 KM.

Contract Agreement Value: Rs.157.87Crs

The Following are the provision made in the Contract Agreement:

- Lining of GA Main Canal to a length of 11.16Km. and branch Canal of 3.25 Km.
- Renovation of syphon 7 Nos and Regulator 1 Nos in the main canal.
- Renovation of 5 Nos of Head Sluices and 8 Nos Pipe Sluices in main canal.
- Formation of Bituminous Road to a length of 6.97 Km. in the left bank of canal
- Canal bank strengthening to a length of 11.16 Km.
- Provision is also made for construction of 11 Nos. ramps and steps for Bathing, Cattle feeding and Communal usage.
- Provision is made in the estimate for shifting of EB Post, tree plantation to meet out the environmental aspects and Name Board Sign board etc., for Health and Safety aspects.

Progress Details:

The progress of work of this package is 73% physical and 72% financial. The balance works are in progress.

Status of Environmental and Social Management Plan (ESMP)

The Status of implementation of Environmental and Social Management Plan has been ascertained through field visits/inspections, etc. and the details are given in the paragraphs given in section 5.



PACKAGE - 4: ERM - GAC PACKAGE NO:4 FROM LS 45.290 KM TO 58.650 KM

Contract Agreement Value: Rs.248.15Crs

The Following are the provision made in the Contract Agreement:

- Lining of GA Main Canal to a length of 13.37 Km. and branch Canal of 6.20 Km. and laterals to a length of 28.77 Km.
- Renovation of syphon 3 Nos in the laterals and canal syphon 6 Nos in the main canal and Drops 36 Nos in the laterals.
- Renovation of Head Sluices 5 Nos in main canal, 2 Nos in the branch canal and 7 Nos
 in the laterals also pipe sluices are 10 Nos in the main canal and 6 Nos in the branch
 canal and 97 Nos in laterals.
- Renovation of bridges 2 Nos in the main canal and 1 Nos in branch canal. Construction of Divisional office building 1 Nos at Thanjavur.
- Construction of protection wall 4.5 Km. for strengthening of the weaker section of the canal bund. Renovation of Tank Sluices 3 Nos. and Tank bund strengthening to a length of 3 Km.
- LS provision is made in the estimate for shifting of EB Post, tree plantation to meet out the environmental aspects and Name Board Sign board etc., for Health and Safety aspects.

Progress Details:

The progress of work of this package is 57% physical and 56% financial. The balance works are in progress.

Status of Environmental and Social Management Plan (ESMP)

The Status of implementation of Environmental and Social Management Plan has been ascertained through field visits/inspections, etc. and the details are given in the paragraphs given below.



PACKAGE - 8: ERM - GAC PACKAGE NO:8 FROM LS 58.650 KM TO 92.200 KM

Contract Agreement Value: Rs.222.45Crs.

The Following are the provision made in the Contract Agreement:

- Lining of GA Main Canal to a length of 24.00 Km. Renovation of syphon 6 Nos, regulator 3 Nos, aqueducts 2 Nos, under tunnel 3 Nos and Drops 8 Nos in main canal.
- Renovation of Head Sluices 14 Nos and Direct Sluices 25 Nos in the main canal.
- LS provision is made in the estimate for shifting of EB Post, tree plantation to meet out the environmental aspects and Name Board Sign board etc., for Health and Safety aspects.

Progress Details:

The progress of work of this package is 50% physical and 48% financial. The balance works are in progress.

Status of Environmental and Social Management Plan (ESMP)

The Status of implementation of Environmental and Social Management Plan has been ascertained through field visits/inspections, etc. and the details are given in the paragraphs given below.

With regard to Quality Control Activities for the above mentioned five packages, based on the documents maintained by the contractors at Site, it was observed that the mandatory Quality Control tests for the construction materials were tested and found to be in order as per the standards. The materials got tested at the Laboratory established at site by the Contractor and also from Government Technical Institutions.

5. Status of Environmental and Social Management Plan (ESMP) in ongoing packages

5.1 The Status of Environmental and Social Management Plan (ESMP) for the ongoing five packages have been ascertained and detailed below:



Table 3: Status of Environmental and Social Management Plan (ESMP) in ongoing

packages	T ====================================	T ~	T
Potential Impact	Mitigation Measures	Compliance (Package 1,2,3,4 and 8)	Remarks
ESHS	The contractor's ESHS officer to prepare the site-specific ESMPs. The ESMPs will be reviewed by PWD prior to construction commencement Grievance logs separately for community and workers shall be prepared and well documented at project site	ESMP has been submitted to the PIU and reviewed by PMC. Grievance logs, boxes and registers for community and	Separate registers are
	documented at project site	workers are made separately available at respective packages.	maintained and it has been monitored continuously
	Construction camp and workers camp 1km away from the habitation area to avoid conflicts and stress with the local community. The location, layout and basic facility provision of each camp shall be submitted to PWD prior to construction	Construction and worker's camps are established as per the conditions and the local administration approved layout has been submitted to PIU.	Established as per norms with the consent of the local authorities
	Selection of sand, stone and other quarry material will be only government licensed supplier only.	Materials are being supplied through Geology and Mining department approved quarry as per norms	Approved quarries are alone used for the supply of quarry materials.
Occupational H&S	To provide safe drinking water (as per IS 10500 standards) and sanitation facilities separately for male and female workers	RO plants are installed in all the site offices and Labour camp to ensure safe drinking water	Established as per standards and is being monitored



Potential Impact	Mitigation Measures	Compliance (Package 1,2,3,4 and 8)	Remarks
			continuously
	Disposal of solid waste of the worker's camp, PPE distributions, awareness on COVID-19, Health and Safety	Proper solid waste disposal method is implemented at camp through MSW management centers. All workers are being provided with PPEs to avoid any safety and health hazards. Toolbox training is being conducted on regular basis to labour.	Disposed off at local solid waste disposal centres and is being monitored continuously
Site clearance activities	Enumeration of the trees to be conducted prior to site clearance to identify the trees that needs to be removed and draw up and implement a Compensatory Afforestation Plan	Compensatory tree plantation as per the proposed compensatory tree plantation plan shall be done in 1:10 ratio	Already initiated at 5 packages
	Construction waste and debris shall be disposed at the landfill approved by the TNPCB	Construction waste is negligible or almost nil	If arises a proper silt and debris disposal plan is made available for all PIUs
Socio- economic benefits	The project intervention involves agriculture productivity enhancement and diversification by ensuring availability of high-quality seeds; setting up of commodity groups, setting up Farmer Producer Organizations to protect	In the upper reaches water availability has ensured a positive change in the cropping pattern.	



Potential Impact	Mitigation Measures	Compliance (Package 1,2,3,4 and 8)	Remarks
Air pollution generated through construction activity,	The location and operation of batching plants needs to be sited as far as possible from residential areas, at least 500 m from downward wind direction of batching plant sites.	Tail end part of the canal has witnessed water reach in advance in spite of the project under progress. Enhanced agricultural productivity will ensure the setting up of Farmer Producer Organizations to protect Farmer's rights. Work being carried as per plan	
construction machinery and vehicular traffic	Operators should use PPE such as dust masks, etc. and Vehicles and construction machinery should be properly maintained and comply with relevant emission standards	Standard PPE is made available and implemented at site as per standards.	PPE is mandatory and use of PPE at site is being monitored continuously
	Regular dust collection, removal and water sprinkling at the batching plants and storage sites of construction materials.	Sprinkling of water is being done at regular intervals for dust suppression. Construction material is covered. Adequate space allotted for material storage.	Dust suppression methods are employed and being carried out in regular intervals.
Water	Construction will take place in dry	Work being carried	No



Potential Impact	Mitigation Measures	Compliance (Package 1,2,3,4	Remarks
Pollution in canals and water bodies	season to avoid de-silting within the flow of water. Avoid construction activities, especially heavy earthworks during heavy rains. In any case, the local water bodies or the area near such a water body is not identified as disposal site.	and 8) as per mitigation plans and waste water is strictly prohibited from being disposed in water body.	contamination of local water bodies in any form is not allowed
Noise pollution generated through construction activities	Operators should use protective personal equipment (PPE) such as helmets and ear muffs.	All workers are being provided with PPEs helmets and ear muffs to avoid any safety and health hazards.	Noise is monitored continuously Post, Pre and During construction activities.
	Periodic maintenance of construction machinery should be undertaken.	Night time construction activities are avoided and maintenance of machinery is followed as per norms	Maintained and monitored regularly
Generation of solid waste	The contractor to submit to the PWD / WRO, the details of the labour camp and site office plan specifying all facilities to be created, including waste disposal facilities and management. It should be ensured that all waste materials from the construction sites are transported to place of identified disposal sites.	Work being carried as per plan. Waste/Silt disposal plan were prepared in detail	Solid waste is disposed off as per norms and not allowed to be disposed anywhere else
Contamination of land and water from Hazardous materials and	All applicable laws, regulations and standards for the safe use, handling, storage and disposal of hazardous waste to be followed. Storage sites for petroleum products	Work being carried as per norms. Display of safety/warning/prec aution boards in	Being monitored regularly



Potential Impact	Mitigation Measures	Compliance (Package 1,2,3,4 and 8)	Remarks
petroleum products	and silt / shoal material (if identified as hazardous) shall be secured and signages will be displayed to include	labor camp, office and working site is ensured.	
Mushrooming of unplanned developments Ecological Impacts	hazard warnings. Control haphazard un-planned development of commercial activities such as shops, restaurant, workshops, etc. Trees under responsibility of PWD, PWD along with Contractor will plant such compensatory plantation along the embankment of the rivers/ canal/ drains.	No such activities have been encountered at site. Compensatory tree plantation as per the proposed compensatory tree plantation plan shall be done in 1:10 ratio in all 5	Under control Being monitored regularly
Occupational H&S	Appropriate signages should be designed in locations where standards are compromised to warn of safety hazards and Sufficient PPE in use.	ongoing packages. Signages and safety placards are placed in appropriate locations. Sufficient PPE is made available in the camp and site.	Monitored regularly and updated as and when required
	Ensure the workers are trained to work on the specific project and Safety and sanitation facility should be provided in the workers camp	Daily, weekly and monthly safety training is being conducted for workers. Sanitation facilities are ensured in the site, camp and offices	-
	Contractor shall arrange for a readily available first aid unit including an adequate supply of sterilized dressing suitable transport at all times to take injured or sick person to the nearest hospital. Maintain a fully equipped first	First aid kit and box with necessary medicines are made available in the labour camp and site (mobile kit).	-



Potential Impact	Mitigation Measures	Compliance (Package 1,2,3,4 and 8)	Remarks
	aid box in the construction camp.	Emergency contact information of nearest hospitals is displayed at camp and the workers are made aware of the same. A fully functional first aid room is also made available	
Community	Carry out campaigns applying various IEC	at labour camp and site office for emergency use. IEC materials have	IEC materials
H&S	methods for prevention of water borne diseases in and around the project areas.	been distributed to the project beneficiaries and community. In order to create awareness, Awareness camps for water borne diseases were carried out along with the monsoon preparedness in consultation with the Public health departments.	have been prepared and distributed to public for creating awareness and prevention of water borne as a part of monsoon precaution.
	Provide information about the construction schedule and construction activities to community.	Provided through formal and in formal consultation meetings with the community	-
	Barricading construction site	Carried out as per plan	-
Chance Find	While excavating or dismantling any structure if any fossils, coins, articles of value / antiquity and remains of archaeological interest discovered on the	No material of value / antiquity and remains of	Is being monitored continuously



Potential Impact	Mitigation Measures	Compliance (Package 1,2,3,4 and 8)	Remarks
	site the contractor shall immediately stop work and inform PWD.	archaeological interest were discovered during the execution in the project area.	
Exposure of Top soil due to denudation leading to soil erosion	It should be ensured that the cleared areas of the site where ERM works are proposed should not be left exposed over long periods.	Continuously monitored to ensure top soil is not exposed for long periods	Is being monitored continuously
Impact on flora/ fauna during vegetation clearance	Vegetation clearance shall be limited only to the portions of the canal slope to be lined at a particular time. This will allow any fauna to migrate to adjoining areas.	Vegetation clearance is done on phases and thus ensures adequate time for the migration of faunal assemblages.	Is being monitored continuously
Tree Cutting will increase the flooding risk due to the land erosion	Compensatory afforestation with suitable local indigenous tree species to be carried out in consultation with Forests Department in GoTN in the vacant land belonging to PWD / WRO.	Compensatory afforestation is started with suitable tree species as per the compensatory tree plantation plan.	Initiated in the 5 packages
	Shrubs, stems and roots shall be uprooted properly to eliminate any chance of void under lining.	Work being carried	
Removal of Top Soil	Preservation and suitable reuse of the top soil for levelling and back filling purpose. May be temporarily stacked on either side of embankment.	as per plan	-
Dust pollution due to stacking of top soil on embankment site	At canal stretches in proximity of sensitive locations i.e. schools, hospitals etc., the following mitigation measures will be implemented: The Contract Package ESMPs will specify the list of sensitive locations.	Ambient Air quality monitoring is being carried out at the sensitive locations.	Is being monitored continuously





Potential Impact	Mitigation Measures	Compliance (Package 1,2,3,4 and 8)	Remarks
	Air quality monitoring to be carried out		
	quarterly at the sensitive locations.		
Sediment	Clearance and collection of excess	There is no silt	-
transportation	muck / soil from canal slope / bed	generated in the	
in canal, water	should be done immediately to	ongoing packages	
bodies and	minimize the erosion potential and	and only levelling	
tanks leading	sediment transportation into canal	the bed of the canal	
to increased	which may lead to increased water	has been carried	
TDS and	turbidity or TDS.	out.	
turbidity.			
Littering and	All transportation vehicles shall be	Littering and	Is being
Spillage on	provided with tarpaulin lining.	Spillage on road	monitored
road due to		due is prevented by	continuously
transportation		Ensuring tarpaulin	
of construction		lining during the	
materials from		construction phase.	
quarries /			
borrow areas			
Damage to	Contractor shall submit work plan with	Work being carried	Is being
crops due to	canal closure timeline for each site to	only during the	monitored
interruptions in	PWD with a minimum period of 45 days	lean season, hence	continuously
irrigation	of crop season	there is no	
supply	Restoration plan shall not be approved by	interruption in the	
	PWD, if it is not submitted within the	water flow,	
	minimum period of 45 days prior to crop season;	irrigation and	
	Subsequent to approval of work plan,	cropping patterns.	
	farmers should be informed about canal		
	closure plan with a minimum period of		
	30 days of crop season.		
Stripping,	Temporary storage and reuse plan for	Silt generated is nil	Is being
stacking of	generated silt material to be prepared	and a detailed silt	monitored
generated silt	and submitted to WRD.	management plan	continuously
material on	The Contract Package ESMP will list	is available in case	
agricultural	and provide map of the identified	if any silt is	
field may	vacant land of WRD.	generated.	
damage top	Generated silt material shall not be		
soil of	stored or dumped in unauthorized		



WRD, Govt. of TN

Potential Impact	Mitigation Measures	Compliance (Package 1,2,3,4 and 8)	Remarks
agricultural	locations including water bodies and		
field	wetlands.		
Fishing by	Precautions to be exercised to prevent	Labours are	Is being
labour in canal	labourers from fishing activities in canal	sensitised to use	monitored
may lead to	stretches to avoid conflict with local	resources in	continuously
conflict with	community	harmony with the	
local people		local community.	

5.2 Report on Silt in Grand Anicut Canal

GA Canal is a manmade contour canal off taking from Grand Anicut (Kallanai) which was constructed across River Cauvery. Length of GA Canal is 148.65 km. Head regulator as controlling arrangement is presently existing at the off-take point of GA canal.

All drainage carriers in the Project area crosses the GA canal through Syphons without confluence with canal water flow. There are no polluting industries in the entire Project area of the GA Canal system. Source of water to the GA canal is only from River Cauvery at Grand Anicut. Instead of existing earthen Canal, it is now proposed to line the bed and sides of the entire GA main canal in this Project. Hence there is no possibility of silt entering into the Canal.

This system has GA Canal as well as 694 tanks. Nearly 30 nos. of tanks are now proposed to take up for renovation in 10 Packages. During renovating the tanks, earth will be excavated from the tanks' water spread area for standardising and strengthening the tanks bund. No silt / earth will be taken up outside the tanks. However necessary field tests will be conducted to ascertain the suitability of soil for the works.

After completion of the project and during operation, if silt accumulates, same will be collected in the silt traps. The same shall be tested for heavy metals and pesticides before disposal. If pesticides and heavy metals are found to be below the standards it will be disposed off by routine methods i.e., giving it to the required farmers or disposing it in the tree plantation area etc. If pesticides and heavy metals are found to exceed the standards, the silt shall be remediated according to the methods viz. (Physical, Chemical and Bioremediation) as suggested in the ESIA report. Further, WRD will continue the above process during as well as after completion of the project.



6. Environmental Monitoring and Management

- ➤ Environmental monitoring (Ambient Air, Surface and Ground Water and Noise) is being performed (Figure 1, Table 1, 2, 3, 4, and 5)
- ➤ All the monitored environmental parameters were found to be well below the national standards.



FIGURE 1: SAMPLING LOCATIONS OF ENVIRONMENTAL COMPONENTS IN ONGOING PACKAGES

Table 4: Details of Environmental sampling and monitoring in Package 1

Components	Ambient Air	•	Surface V	Vater	Ground V	Vater	Noise	
Locations	Kiliyur,	Indalur	Kiliyur	and	Kiliyur	and	Kiliyur,	Indalur
	Batching	Plant,	Solagamp	atti	Solagamp	atti	Batching	g Plant,
	Indalur Vill	age and					Indalur	Village and
	Solagampatti						Solagam	patti

Table 5: Details of Environmental sampling and monitoring in Package 2

Components	Ambient Air	Surface Water	Ground	Noise
			Water	
Locations	Budalur Batching	Budalur	Budalur	Budalur Batching
	Plant, Kuruvadipatti,	Batching Plant,	Batching	Plant, Kuruvadipatti,
	Chinnakangeyampatt	Kuruvadipatti	Plant,	Chinnakangeyampatti
	i Village and		Kuruvadipatti	Village and Budalur
	Budalur Village			Village

Table 6: Details of Environmental sampling and monitoring in Package 3

Table 0. Details of Environmental sampling and inc						g m i ackage c	/
Components	Ambient Air		Surface Water		Ground	Noise	
					Water		
Locations	Batching Pla	ant	Kandithamp	attu,	Batching Plant	Batching	Plant
	Pillayarpatti,		Kovilur	and	Pillayarpatti	Pillayarpatti,	Vallam
	Vallam hospit	tal,	Melauloor		and	hospital,	
	Vannarapettai				Vannarapettai	Vannarapetta	i
	Village	and			Village	Village	and
	Manojipatti					Manojipatti	

Table 7: Details of Environmental sampling and monitoring in Package 4

Components	Ambient Air	Surface Water	Ground	Noise
			Water	
Locations	Madigai Village,	Kandithampattu,	Kandithampatt	Madigai Village,
	Eachankottai,	Kovilur and	u, Madigai and	Eachankottai,
	Paruthikottai	Melauloor	Kovilur	Paruthikottai Village
	Village and Pudur			and Pudur

Table 8: Details of Environmental sampling and monitoring in Package 8

Components	Ambient Air	Surface Water	Ground	Noise
			Water	
Locations	Sengamedu, Periya	Unjaividuthi and	Sengamedu	Sengamedu, Periya
	Ammankudi,	Vettuvakottai	Site (Bore	Ammankudi,
	Sellampatti and		well) and	Sellampatti and
	Eachankottai		Sengamedu	Eachankottai
			Village	

7. Compensatory tree plantations

Table 9: Details of completed compensatory tree plantations in ongoing packages

S.	Botanical/Vernacular name	Package						
No	Botanicai/ vernacuiai name	1	2	3	4	8		
1	Mangifera indica (Mango)	10	24					
2	Azadirachta indica (Neem)	5	2		100			
3	Pongamia pinnata (Pungam)	1	38	125	50			
4	Syzygium cumini (Naval tree)	10	27		100			
5	Tamarindus indica (Tamarind)		11					



S.	Botanical/Vernacular name			Packa	ge	
No	Dotameal/Vernacular name	1	2	3	4	8
6	Phyllanthus emblica (Gooseberry)	5	4			
7	Psidium guajava (Guava)	5	14			
8	Prunus dulcis (Badam)		14			
9	Manilkara zapota (Sapota)		4			
10	Ficus religiosa (Peepal tree)		4		50	
11	Ficus benghalensis (Banyan tree)		2		100	
12	Monoon longifolium (Netlingam tree)		14			
13	Pithecellobium dulce (Kodukka puli)		3			
14	Artocarpus heterophyllus (Jack fruit)	10	22			
15	Prosopis cineraria (Karuvelam)			95		
16	Spathodea campanulata(African Tulip)			110		
17	Albizia lebbeck (Vaagai)			98		
18	Pterocarpus marsupium (Vengai)			110	200	
19	Swietenia macrophylla (Mahogany)			62	100	
20	Madhuca longifolia (Iluppai)				100	
21	Mimusops elengi (Magizham)				50	
22	Terminalia arjuna (Arjuna Tree/Neermaruthu)				150	
23	Borassus flabellifer (Panai)					4000
Tota	1	46	183	600	1000	4000
Gra	nd Total			5829)	



8. Various daily (Tamil) newspaper reported compensatory Tree plantation events from ERM - GA Canal Project



Completed Environmental awareness/sensitization programme

- ➤ Environmental awareness programme was conducted for local community and contractor's Key personnel in Site office.
- ➤ Capacity building program was conducted for the PIUs Engineers and contractor's key personnel on Ecology and Environment, Social, Health and Safety activities

9. Social Due Diligence

1.1 As per the AIIB ESF requirement, an Environmental and Social Due Diligence Report (ESDDR) has to be prepared and approved by AIIB for the packages already awarded. The purpose of the due diligence is to verify whether the tendered packages are in compliance with the AIIB policy requirements. The compliance to the applicable rules and regulatory requirements, social safeguard compliances (Resettlement Framework), EMP requirements, institutional arrangements, stakeholder consultations, GRC and



reporting mechanism were verified. Consultations were conducted with the safeguards officers of the contractors to understand the level of implementation of the safeguard requirements as indicated in the bid document/ contract agreement. Focus Group Discussion was conducted with the local community to get their feedback on this project.

9.2 Reconnaissance Surveys

- 1. To identify the potential social impact in the awarded 5 sections, reconnaissance and transect walk surveys were carried out between 14.07.2020 and 10.09.2020. Transects walks and consultations were conducted in all the 5 packages and focus group discussion were held with the available farmers, other villagers, leaders of the farming communities, field level staff of the village panchayats etc. Transects were conducted at several places on both sides of the bunds of the 5 packages.
- 2. During the reconnaissance surveys and transect walk carried out there were no impacts, either temporary or permanent identified along the canal Right of way. There is no land acquisition proposed in the awarded 5 packages. The RoW is free of any structures or encroachments. There are a numerous cattle ramps, bathing ghats along the canals. These will be rebuilt at the same location or at a different location in consultation with the communities. Table No. 7, provides site photographs in the 5 packages, showing the canal RoW without any structures/ cultivation, etc.
- 3. Based on the site visit and consultations held there were no involuntary resettlement (IR) impacts identified or any impact to any indigenous population (IP) along the canal RoW in the 5 packages. ESS 3 (Indigenous Populations) will not be triggered in these 5 packages.

Labour Influx in the Project:

During the ESDDR carried out for the 5 packages, all the 5 labour camps were visited. The Contractors hired approximately 30 % of the labour locally and 70 % were from out the state. Those from outside the State lived in the labour camps. According to the Bid Document each contractor has to have a Health and Safety officer and one Social Development Officer. These two officers ensure that the labours are regularly briefed on health and safety issues including having cordial interactions with the local communities. There have been no adverse issues due to the workers in the labour camps. There has been no influx of the labour camp workers into the community, as once the works are



completed the contractor moves the group or gang to another location. The local labour remains back in their respective villages. In the event any adverse situation is reported it will be addressed by the Health and Safety and Social Development Officers. And if there is an external complaint by the community the Project Grievance Redress mechanism will look into it.

9.3 Indigenous Population (IP)

The GACS ERM project covers three districts in Tamil Nadu namely Trichirapalli, Thanjavur and Pudukottai. The major command area of GA canal is in Thanjavur District. According the Census 2011, the project area covers a population of 19,80,960 persons of which 1,328 persons accounting for 0.067 % are identified as Tribal population.

During the census and reconnaissance surveys and consultations carried out throughout the GA Main Canal, there were no groups who had (a) self- identification as members of a distinct indigenous cultural group and recognition of this identity by others; (b) collective attachment to geographically distinct habitats or ancestral territories in the Project area and to the natural resources in these habitats and territories; (c) customary cultural, economic, social or political institutions that are separate from those of the dominant society and culture; and (d) a distinct language, often different from the official language of the country or region. There were no groups identified that had lost collective attachment to geographically distinct habitats or ancestral territories in the Project area because of forced severance.

The tribal population in the project area are primarily engaged as agriculture labourers and are integrated with the main stream population. The tribal population will get positive benefits of the GACS canal along with all the other general population who will get water from this canal.

An exhaustive social impact assessment was undertaken including field visits, focus group discussions, stakeholder's consultations and extensive reconnaissance surveys. There were no affected persons identified in the GA Main Canal Right of Way nor were there any persons identified with indirect negative impacts. The social impact assessment conclusively



confirms that the project will not adversely affect the 0.067 % of the tribal population in the project area and will not trigger ESS 3 of AIIBs ESF.

Table No. 10: Photographs of the Alignment during surveys carried out between 14.07.2020 and 10.09.2020.

1	4.07.2020 and 10.09.2020.	
S. No	Package Details	Photographs of alignment during the reconnaissance Survey with Chainage
1	Package 1: Rehabilitation of Irrigation Infrastructur es in G.A. Main Canal L.S. from 0.000 Km. to 12.624 Km. and G.A.No.1A Channel, G.A.No.1 Rear Channel, G.A.No.1B Rear Channel with Feeding Tanks in Budalur Taluk of Thanjavur District	
		Chainage @ LS 10.000 to 12.624KM
2	Package 2: Rehabilitation of Irrigation Infrastructures in G.A. Main Canal L.S. from 12.640 Km. to 30.430 Km, G.A.No.2 Rear Channel, G.A.No.3 Channel and Chakkara Branch Channels with Feeding Tanks in Budalur and Thanjavur Taluks of Thanjavur District	Chainage @ LS 24.350 to 30.450 km



3

4

5

P	acl	Ka	ıge	3:	
_				_	

Rehabilitation of **Irrigation** Infrastructures in G.A. Main Canal L.S. from 30.430 Km. to 45.290 Km. and No.4 G.A. Channel, G.A. No.5 Channel, G.A. No.5A Rear channel and Neivasal Thenpathy Branch Channels with Feeding Tanks in Papanasam and Orathanadu **Taluks** of Thanjavur District



Chainage @ LS 30.700 to 35.65 km

Package 4:

Rehabilitation of **Irrigation** Infrastructure in G.A. Main Canal L.S. from 45,290 Km. to 58,650 Km., V.T. Channel, G.A. No. 6 Channel, G.A. No. 7 Channel, G.A. No. 8 Channel, G.A. No.8 Rear Channel, and Kalyanaodai Branch Canal L.S. from 0.000 Km. to 13.000 Km, Kulamangalam main Paruthikkottai Channel, Channel. Melavannipattu Channel with Feeding Tanks in Thanjavur, Papanasan, Orathanadu Taluks Thanjavur District.



Chainage @ 51.20 to 54.60 km

Package 8:

Rehabilitation of Irrigation Infrastructures in G.A. Main Canal from L.S. 58.650 km to 92.200 km Akkaravattam Main channel, Alivalam Naduvikottai Channel. Channel. G.A. No. 13 Channel and G.A. No. 14 with Channel Feeding Tanks Orathanadu and Pattukkottai Taluks of Thanjavur District and Karambagudi Taluk of Pudukottai District.



Chainages @ LS 58.674 to 58.995 kms



Stakeholder Consultations

- 1. Focus group consultations were carried out in the 5 packages. The consultations focused on opinions and perspectives of the farmers and other stakeholders about the GAC system how it is working, issues and concerns of the farmers, their needs related to GAC and agriculture practices. The discussion also helped to learn about the farming system characteristics, water management, extension support, marketing of the produce, the decision-making process of water management, and about the presence of grass root institutions like Water Users Association (WUA) etc. The discussion with farmers helped to gain gender related opinions and perspectives related to water management and agriculture.
- 2. The details of the consultations are given in Table-8. The photographs of the meetings are given in Annexure 1. Officials explained about the present conditions of the canal, bund, water carrying capacity, flow of the water, water distribution and water management practices. The objective, importance and benefits of the project were explained to the project beneficiaries. In addition, the project officials created awareness on conservation of water resources and the importance of community participation for the maintenance of the Canal.



ESDDR for Extension Renovation and Modernization (ERM) of Grand Anicut (GA) Canal System Project

Table 11: Details of Stakeholder Consultations

Date	Venue	Participants	No. of Participants Male Female Total		nts	Points raised by the community	Response of the Project		
Stakeholder's/public consultations in Package - 1									
05-03- 2021	Thogur	Farmers, Village youth and Women Self Help Groups	23	38		benefits of the project. The community requested to construct steps and ramps for their domestic purpose. Village youths asked about projects benefits.	The project officials explained about the benefits of the project interventions. Created awareness about water pollution and water management. The officials assured the farmers that the canal water will reach the tail end agricultural field during the entire period of the cultivation. The officials assured to provide steps and ramps as requested by the farmers.		
13-06- 2022	Indalur	Farmers, Village youth and Women Self Help Groups	18	45		communities requested to strengthen the bund of the	Officials explained about the present conditions of the canal, bund, water carrying capacity, flow of the water water distribution and water		



ESDDR for Extension Renovation and Modernization (ERM) of Grand Anicut (GA) Canal System Project

Date	Venue	Participants	No. of Participants	Points raised by the community	Response of the Project
				Most of the people requested to construct the steps and ramps for their domestic and agricultural activities.	management practices. The proposed interventions, expected outcomes and its benefits were explained. The officials from WRD accepted the community's requirements and assured to fulfil their needs during construction of the work. Officials explained about the importance of community participation for the conservation and maintenance of the canal and water. During the consultation awareness was created about the importance of the canal water and source of water pollution.



				No. of		Points raised by the	Response of the Project
Date	Venue	Participants	Participants		nts	community	
8-05- 2021	Kiliyur	Farmers, Village youth and Women Self Help Groups	18	45	63	_	Officials accepted the communities request and agreed to provide the water chamber, steps, and ramps sufficiently. Created general awareness about the importance of sustainable water management with community participation. Officials assured the public that the canal water will reach the agricultural field after the execution of the project intervention.
08-10- 2022	Solagampatti	Farmers, Village youth and Women Self Help Groups	18	37	55	The farmers requested to construct a water chamber for cattle, steps and ramps for local communities' use. Public requested to complete the work as soon as possible without delay.	The officials appreciated the public participation in the maintenance of the canal and agreed their requirements to implement during the execution of the work. The PIU officers assured that the execution of the work will be completed in the proposed time frame



Date	Venue	Participants	Pa	No. of articipa	nts	Points raised by the community	Response of the Project
Stakeh	older's/public cons	sultations in Package	- 2				without delay. The objective, importance and benefits of the project were clearly explained to the project beneficiaries.
	<u>-</u> L		1	T	1	<u> </u>	
07-02-	Budalur	Farmers, Village youth and Women	12	39	51		The respective package engineers from PIU explained about the project
2021		Self Help Groups				and ramps for their daily domestic activities. Village youths asked about the project benefits and	1



Date	Venue	Participants	Pa	No. of Points raised by the community		•	Response of the Project
							and ramps. In addition, experts created awareness on conservation of water resources and the importance of community participation for the maintenance of the Canal.
13-04- 2022	Chitrakudi	Farmers, Village youth and Women Self Help Groups	17	37	54		The WRD officials Explained about the benefits and purpose of the project to the beneficiaries and about the importance of waterways and cleanliness. Concerned package PIU engineer assured to fulfil the requirements of the beneficiaries.
12-10- 2022	Kangaeyanpatti	Farmers, Village youth and Women Self Help Groups	13	35	48	demanded steps and ramps for the local community's access.	The Project team explained the purpose and benefits of the ERM works. Implementation unit of the respective package assured that they will fulfill



Date	Venue	Participants	Pa	No. of articipa		Points raised by the community	Response of the Project
						requested to construct many water chambers	the needs of the farmers.
Stakeh	olders Consultatio	ns Package 3					
04-06- 2021	Vannarapettai	Farmers, Village youth and Women Self Help Groups	20	40	60	domestic purpose and ramps for the accessing water for cattle Village youths asked about the project's benefits and purpose.	project. It was assured that the steps and ramps will be provided. It was assured that the breaches will be rectified by the project.
07-10- 2022	Ra Ra Muthuraikottai	Farmers, Village youth and Women Self Help Groups	18	45	63	ramps and asked about the purpose of the project	WRD officials and experts explained about the importance of water and maintenance of the waterways and created awareness not to pollute the canal water. Officials explained the benefits of the project



Date	Venue	Participants	Pa	No. of articipa	nts	Points raised by the community	Response of the Project
		-					interventions and purpose.
							And also assured that the steps and ramps will be provided.
							Further the officials briefed about the purpose of the project and explained that the canal is to be renovated and ensure that the water reaches the field on time and make sure that the canal water is fully utilized by all the farmers.
Stakeh	olders Consultatio	ns Package - 4		1		,	
27.02.2 021	Kandithampattu Village of Thanjavur District	Villagers, Ayacutdarars of GA Canal and Civil Society Organisations of the locality.	31	22	53	the scope of the project. People requested to construct a new bridge in the canal for	The Project officials explained the scope and benefits of the project. The Officials agreed to fulfil the demands of the people. The Officials explained the harmful



Date	Venue	Participants	P	No. of articipa		Points raised by the community	Response of the Project
Stakeh	olders Consultatio	ns Package 8					effects of polluted water and requested the public not to pollute water.
	-		23	38		h	hr
05-03-	Sillathur, Vettikkadu.	Farmers, Village youth and Women Self Help Groups		50	61	purpose of the project and requested steps and ramps for accessing the GA canal water. Village youths asked about projects benefits	The project officials explained the purpose and benefits of the project. All the farmers and local communities were strongly advised not to use the canal for dumping domestic waste. Awareness was created to protect the canal water and people were advised to stop polluting the canal.



Right of Way

- 1. The reconnaissance survey was carried out all along the length of the 5 packages within the RoW of the canal to identify non-title holders (encroachers and squatters) for their temporary loss of livelihood due to project activities and impact on residential structures. The Right of Way of the canal consists of the main canal its bunds, service roads and embankments of the canal. Based on the survey it is observed that the project does not involve any loss on residential structures etc. due to project activities and no additional land acquisition is required for the purpose of implementation of the project. The project will be executed within the RoW and the land that belongs to Government. The RoW for the 5 Packages is given in the Annexure 20.
- 2. The RoW of the 5 packages varies from 11 m on the right bank of the canal to approximately 120 m on the left bank of the canal. Table 9 shows a typical cross section of the canal.

Distance between ROW to inner edge of canal 27.50M 3.00M RB G.A.Canal BOUNDARY STONE

Table 12: Typical Cross section of the 5 packages





FIGURE 2 : BEFORE CONSTRUCTION THANJAVUR DISTRICT – REHABILITATION BEFORE BED LINING @ LS 38.500 KM OF G.A. CANAL PACKAGE-3



FIGURE 3 : AFTER CONSTRUCTION THANJAVUR DISTRICT – REHABILITATION BEFORE BED LINING @ LS 38.500 KM OF G.A. CANAL PACKAGE-3





FIGURE 4: THANJAVUR DISTRICT – REHABILITATION DROP NO.1 @ LS.62.705 KM OF G.A.CANAL CHELLAMPATTI VILLAGE UNDER STATE FUND (ERM PACKAGE NO.8)

Grievance Redressal Mechanism

- 1. The project has an established grievance redressal mechanism, which will also be applicable for these 5 packages.
- 2. At project level GRM is in place for addressing social, environmental and project related grievances. The GRM has three tier structures and processes. At the grass root level the committee is made up of Assistant Engineer (PIU), Assistant Executive Engineer (PIU). This committee meets on weekly basis. This committee looks after the grievances related to implementation of the mitigation measures, construction practices and issues related to project. It resolves disputes relating to resource use that may arise between communities, or the actual implementation of the project activities. At the next level the Executive Engineer (PIU) convenes fortnightly meetings. The third level is the Superintending Engineer, Executive Engineer (PMU) at the district level. At the third level meetings are organized once a month. Name, Office Address, contact number and email id of authorized officer shall be communicated to all the communities in the project area.



Resettlement Planning Framework

1. A Resettlement Planning Framework (RPF) has been prepared for mitigating potential impact of the project. The RPF has been prepared conforming to the National and State laws and the Asian Infrastructure Investment Bank's (AIIB's) Environmental and Social Framework (ESF, 2022). The resettlement planning framework describes the principles and approach in avoiding, minimizing and mitigating adverse social impacts that may arise in implementing the proposed project. In the event any impacts are identified during construction the impacts will be mitigated within the RPF.

The RPF and the ESIA will be disclosed on the official website of WRD and the official website of AIIB after getting approval.

Table 13: Health camps organized for the laborers and community

Package No	Health camp organized	Total number of program	Total number of participants	Male	Female
1	Laborers	2	120	120	-
	Community	2	53	53	30
2	Laborers	2	120	120	-
	Community	2	148	107	41
3	Laborers	2	45	45	-
	Community	2	117	77	40
4	Laborers	2	69	69	-
	Community	2	114	55	59
8	Laborers	2	65	65	-
	Community	2	130	114	16

Table 14: General Health Camp and Awareness conducted for the labourers and community

Package No	General Health awareness	Total number of program	Total number of participants	Male	Female
1	Laborers	2	173	172	1
	Community	2	83	40	43
2	Laborers	2	160	159	1
	Community	2	78	48	30
3	Laborers	2	37	37	-
	Community	2	117	77	40



4	Laborers	2	69	69	-
	Community	2	114	55	59
8	Laborers	2	65	65	-
	Community	2	130	114	16

Table 15: Awareness on COVID-19 & HIV

Package No	Aawareness on COVID- 19 & HIV	Total number of program	Total number of participants	Male	Female
1	Laborers	2	173	172	1
	Community	2	83	43	40
2	Laborers	2	160	159	1
	Community	2	78	40	38
3	Laborers	2	37	37	-
	Community	2	117	77	40
4	Laborers	2	69	69	-
	Community	2	114	55	59
8	Laborers	2	65	65	-
	Community	2	130	114	16

Table 16: Gender sensitization and Gender Based Violence against women and children

Package No	Target group	Total number of program	Total number of participants	Male	Female
1	Laborers	2	173	172	1
	Community	2	78	40	38
2	Laborers	2	160	159	1
	Community	2	92	50	42
3	Laborers	2	37	37	-
	Community	2	117	77	40
4	Laborers	2	69	69	-
	Community	2	114	55	59
8	Laborers	2	37	37	-
	Community	2	117	77	40

Table 17: Awareness program on Sanitation for community and Labour

Package No	Target group	Total number of program	Total number of participants	Male	Female
1	Laborers	2	173	172	1
	Community	2	83	43	40
2	Laborers	2	160	159	1
	Community	2	78	40	38
3	Laborers	2	37	37	-
	Community	2	117	77	40
4	Laborers	2	69	69	-
	Community	2	114	55	59
8	Laborers	2	37	37	-
	Community	2	117	77	40

Compliance status of GRM

- GRM boards were installed at all 5 package sites and PIU offices.
- GRM boxes are also placed in a place accessible to public and labourers separately.
- Registers are put in place and regular updating is done

Table 18: Compliance status of GRM

S.	Types of Grievances	Number of	Status
No		Grievances	
1	Steps, ramps, were requested for livestock access	27	23 addressed and resolved and remaining are under process
2	Graveyard protection in package 2	1	resolved
3	Local people requested for daily wage works	50	resolved

Table 19: Completed stakeholder's/public consultations about the ERM - GA canal project

	Completed stakeholder's/public consultations in Package - 1									
	Venue	Participants .	No. of Participants			Points raised by the	Response of the Project			
Date	Venue	1 at ticipants	Male	Female	Total	community	Response of the Project			
05-03-2021	Thogur	Farmers , Village youth and Women Self Help Groups	23	38	61	Farmers and the public were requested to explain about the benefits of the project. General public were requested to construct the steps and ramps for their domestic purpose. Village youths asked about projects benefits.	The project officials explained about the benefits of the project interventions. Created awareness about water pollution and water management. The officials assured the farmers that the canal water will reach the tail end agricultural field during the entire period of the cultivation.			



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	13-06-2022	Indalur	Farmers , Village youth and Women Self Help Groups	18	45	63	Farmers and local communities requested to strengthen the bund of the canal. Most of the people requested to construct the steps and ramps for their domestic and agricultural activities.	Officials were explained about the present conditions of the canal, bund, water carrying capacity, flow of the water, water distribution and water management practices. After explaining about the contemporary condition of the canal and enlightening the proposed interventions and expected outcome and its benefits. The officials from WRD accepted the community's requirements and assured to fulfill their needs during the execution of the work. Officials explained about the importance of community participation for the conservation and maintenance of the canal and water. During the consultation awareness was created about the importance of the canal water and source of water pollution.
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08	3-05-2021	Kiliyur	Farmers , Village youth and Women Self Help Groups	18	45	63	Most of the farmers were requested to construct a water chamber for cattle feeding/drinking. Farmers and local communities were requested to provide sufficient steps and ramps for their day to day usage.	Officials accepted the public requirements and agreed to provide the water chamber, steps, and ramps sufficiently. Created general awareness about the importance of sustainable water management with community participation. Officials strongly ensured the public that the canal water will reach an unreached agricultural field after the execution of the project intervention.
08	3-10-2022	Solagampatti	Farmers , Village youth and Women Self Help Groups	18	37	55	The farmers were requested to construct a water chamber for cattle feeding, steps, and ramps for local communities' usage. Public were requested to complete the work as soon as possible without delay.	The officials appreciated the public participation in the maintenance of the canal and agreed their requirements to implement during the execution of the work. The respective package officials from PIU unit ensured that the execution of the work will be completed in the proposed time



			frame without delay.
			The objective, importance and benefits of the project were clearly explained to the project beneficiaries.







Completed stakeholder's/public consultations in Package - 2 12 39 07-02-2021 Budalur Farmers, 51 During the consultation The respective package engineers Village the participants were from PIU explained about the youth and requested Steps and project benefits. Women Self Ramps for their day to PIU officials responded that the day domestic activities. Help Groups execution work will be completed Village youths asked in the proposed time period with about the project benefits the people's requirements such as and timeline. steps, and ramps. In addition, experts created awareness on conservation of water resources and the importance of community participation for the



							maintenance of the Canal.
13-04-2022	Chitrakudi	Farmers , Village youth and Women Self Help Groups	17	37	54	During the consultation the participants were requested Steps and Ramps for their day to day domestic activities.	The WRD officials Explained about the benefits and purpose of the project to the beneficiaries. Also explained about the importance of waterways and cleanliness. Concerned package PIU engineer assured to fulfil the requirements of the beneficiaries.
12-10-2022	Kangaeyanpatti	Farmers , Village youth and Women Self Help Groups	13	35	48	Most of the participants were demanding steps and ramps for the local community's access. Cattle rearing farmers were requested to construct many water chamber for cattle.	The Project team explained the purpose and benefits of the ERM works. Implementation unit of the respective package was assured that they will fulfill the needs of the farmers.



Completed stakeholder's/public consultations in Package-3 20 40 04-06-2021 Vannerapettai Farmers, 60 Farmers requested Steps The project officials explained about the benefits and purposes of Village for bathing purpose youth and the project. Farmers requested ramps Women Self for the accessing water to It was assured that the steps and Help Groups the cattle ramps will be provided. Village youths asked It was assured that (5A channel) the about project's will be provided by the project. benefits and purpose. Farmers and communities requested to rectify the



						breaches of the Canal.	
07-10-2022	Rara Muthuraikottai	Farmers , Village youth and Women Self Help Groups	18	45	63	Farmers requested Steps and ramps and asked about the purpose of the project	experts explained about the







		Complete	ed stake	holder's	/public co	onsultations in Package-4	
27.02.2021	Kandithampattu Village of Thanjavur District	Villagers, Ayacutdarars of GA Canal and Social Activists of the locality.	31	22	53	Villagers requested to explain the scope of the project. People requested to construct a new bridge in the canal for crossing purposes. Social Activists requested for the provision of cremation sheds, steps	The Project officials explained the scope and benefits of the project. The Officials agreed to fulfil the demands of the people. The Officials explained the harmful effects of polluted water and requested the public not to pollute water.



Completed stakeholder's/public consultations in Package-8				and cattle ramps at necessary locations. Ayacutdarars of GA Canal explained the flaws in the existing Canal conditions and requested to improve the quality.				



05-03-2021	Sillathur, Vettikadu.	Village		38	61	Farmers and the public requested to explain the purpose of the project and requested steps and ramps for accessing the GA canal water. Village youths asked about projects benefits	The project officials explained the purpose and benefits of the project. All the farmers and local communities were explained and strongly instructed to not use the canal by dumping the domestic wastages. Awareness was created to protect the canal water and people were advised to stop polluting the canal from community resources.
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11. Health awareness news published in Dinathanthi (Tamil newspaper)





Figure 5: Health Camp published in Daily Newspaper (Tamil)



12. Picture of the completed events



Figure 6 : Display of first aid kit



Figure 7: Photo of health awareness for public





Figure 8 : Public consultation at Nagudi

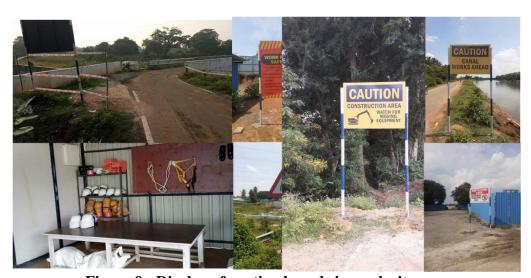


Figure 9: Display of caution boards in work site area





Figure 10: Compensatory tree plantation by package 8 site involving community



Figure 11 : GRM Box installed at package 4



Figure 12 : Health camp for workers at package 3



Figure 13 : Health camp for workers at package 1