

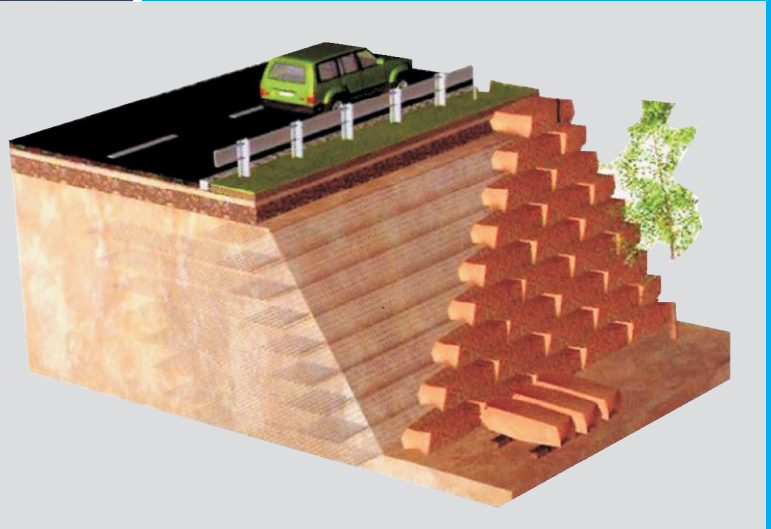
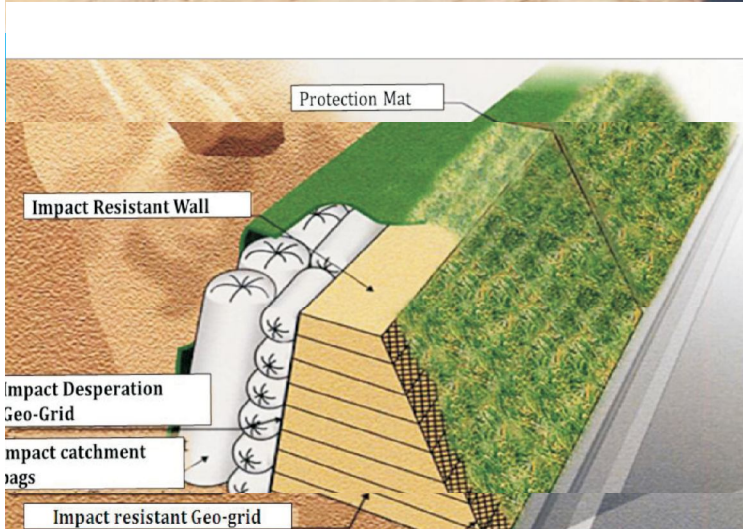


2015

Scheme for Promoting Usage of Geotechnical Textile in North East Region



Ministry of Textiles
Government of India
Udyog Bhawan
New Delhi



संतोष कुमार गंगवार
SANTOSH KUMAR GANGWAR



वस्त्र राज्य मंत्री (स्वतन्त्र प्रभार),
भारत सरकार
नई दिल्ली-110011
Minister of State for Textiles
(Independent Charge),
Government of India
New Delhi-110 011



Message

It brings me a great pleasure to release the operational guidelines prepared by Ministry of Textiles, Centre of Excellence for Geotechnical Textiles and North State Governments for the 'Scheme for Promoting Usage of Geotechnical Textiles in North Eastern Region'. The scheme has been formulated with a focus on demonstration of the benefits of usage of Geotechnical Textiles in difficult terrains of North Eastern Region of India, which have presented a challenge for building a sustainable infrastructure. The usage of Geotechnical Textiles in NER will ensure the longevity of the infrastructure projects undertaken and thereby providing the much needed boost to the socio-economic structure of the region.

It is a matter of pride that the joint efforts of all stakeholders have culminated in formation of these guidelines and hope that these guidelines will result in providing a boost to the Technical Textile market and also project the geotechnical textiles as a tool for making the infrastructure much more sustainable and a key to the development of North Eastern Region in India.

I wish the scheme all the success in fulfilling its purpose.


(Santosh Kumar Gangwar)

संजय कुमार पण्डा, भा.प्र.से.
सचिव
Sanjay Kumar Panda, IAS
Secretary



भारत सरकार
वस्त्र मंत्रालय
उद्योग भवन, नई दिल्ली-110011
GOVERNMENT OF INDIA
MINISTRY OF TEXTILES
UDYOG BHAWAN, NEW DELHI - 110 011



Message

Geotechnical Textiles have proven their utility worldwide in providing cost effective infrastructural solutions in most difficult terrains besides the infrastructural requirements in everyday life. This is of special significance in development of North Eastern Region. (NER) which receives high rainfall and has disadvantages like geographical isolation and inadequate physical infrastructure. I am extremely happy on the eve of launching of a new initiative for promotion of technical textiles in the North Eastern Region titled “**Scheme for Promoting the Usage of Geotechnical Textiles in North Eastern Region of India**”. This scheme will be of considerably help to the NER by reduction in maintenance costs and increase in life of assets created. This will ultimately lead to the development of the economy and general public welfare, besides benefiting stakeholders such as construction industry, technical textile industry in the region.

The objective of the scheme is to provide the necessary impetus to the Geotechnical Textile industry in India by the way of demonstrating the benefits of usage. The scheme shall also help in training the stakeholders in the usage techniques of this cutting edge technology in the difficult terrains of the North Eastern Region of India.

I hope that implementation of this scheme will bring change to the North Eastern Region and its infrastructure will be benefitted immensely owing to the usage of Geotechnical Textiles. Moreover, the North Eastern Region shall also witness rise in economic activities owing to the better connectivity with rest of the county.

I would seek active and wholehearted cooperation of all of the stakeholders form the State Govts. of NER, industry such as Geotechnical Textile Manufacturers, Construction Agencies etc. as we jointly strive towards realizing success and objectives of this scheme.


(S.K. Panda)

CONTENTS

Sr. No.	Title	Page No.
	OVERVIEW OF SCHEME FOR PROMOTING USAGE OF GEOTECHNICAL TEXTILES IN NORTH EAST REGION	1
1.	Introduction	1
2.	Scheme Components	3
3.	Targets for the Scheme Components	7
4.	Implementation of the Scheme	8
5.	Fund Allocation	9
6.	Total Cost of the scheme	10
	OPERATIONAL GUIDELINES FOR SCHEME FOR PROMOTING USAGE OF GEOTEXTILES IN NORTH EAST REGION	12
7.	Scheme Implementation and Monitoring Authorities	12
8.	Scheme Components	16
9.	Hiring of Project Coordinating Agency (PCA):	35
10.	Roles and Responsibilities of other Agencies involved in the scheme	37
	Glossary of Abbreviations Used	38

F. No. 6/20/2012-A & MMT
Government of India
Ministry of Textiles
New Delhi.

Date : 16th March, 2015

OFFICE MEMORANDUM

SUBJECT : GOVERNMENT ORDER ON SCHEME FOR PROMOTING USAGE OF GEOTECHNICAL TEXTILES IN THE NORTH ESTERN REGION. FOR FIVE YEARS FROM 2014-15 TO 2018-19

1. INTRODUCTION

The North Eastern Region (NER) of the country comprises of eight states, Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura. The region occupies about 5.6% of the total geographical area of the country. In spite of rich biodiversity and ethno-cultural richness the region has its share of problems in terms of infrastructural inadequacies and connectivity etc. Varied climatic and geophysical conditions of this region make the general infrastructure of the region, such as roads, fragile and susceptible to frequent damages. Due to heavy rains and unstable geographical conditions the hills slopes lead to frequent landslides thereby damaging roads and causing serious erosion problems. In spite of heavy rains the region faces serious water crisis as the rain water cannot be retained and stored. Traditional civil engineering solutions for construction of hill roads in these landslide prone and sinking terrains have not been very successful in retaining the infrastructure for a longer duration, needing frequent restoration and repair leading to heavy expenses.

Geotechnical textiles are used world over to address some of these problems with proven track record as a technology world over. Therefore, these materials carry a huge potential for use in these regions in projects relating to road construction, hill slope protection and erosion control, and reservoir lining for water retention. The application of geotechnical textiles components in river bank protection has not been covered/considered in this scheme.

Geotechnical textiles are technical textile products manufactured from natural and man-made fibres using woven, knitting and non-woven methods, and are used in geological applications involving rock, soil, or other natural elements in civil engineering projects. Geotechnical textiles are gaining increasing acceptability both in the domestic and in international markets in view of their special technical attributes such as drapability, inertial strength, ecological efficiency, low maintenance, customizable fabric, fineness, low extensibility and commercial advantages, like easy availability of customized fabric and comparative economy. Geotechnical textiles are being increasingly used globally to address dangers to infrastructure caused by degradation and natural disasters.

Globally, many developed economies have formulated clear guidelines for the usage of technical textiles in specific applications. According to a report by Global

Industry Analysts (GIA) on the global Geo-synthetics market, global demand for geo-synthetics will reach 6.9 billion square yards by 2015. The transportation sector will be a key beneficiary of geo-synthetic products and their abilities in enhancing durability of roads, improving drainage facilities, and facilitating construction of erosion-preventing structures.

Geotechnical textiles are poised to command a big domestic market if sustained efforts to popularize them are continued. Geotechnical textiles are considered to have significant growth potential in the Indian market with the Working Group on Textiles and Jute for 12th Five Year Plan (FYP) projecting the national geotechnical textile market to grow to Rs. 1,108 crore at a rate of 22% during 12th FYP. The road sector in particular represents the most obvious area of opportunity for India's geotechnical textile segment due to direct applicability and the sheer scale of projects.

Geo-climatic and topographic characteristics in NER make infrastructure in this region amenable to the use of geotechnical textiles. The region is fraught with heavy rainfall, fragile terrain, landslides and sinking zones, river bank erosion, high seismic activity, weak soil conditions, young mountains, and problems in water harvesting and storage. The North Eastern Region of India is yet to adopt this innovative technology, barring a few roads in Assam, which were taken-up as pilot projects under PMGSY.

The scheme has been drawn up with active involvement of key stakeholders and the North Eastern State governments. NER State Governments have already identified several pilot projects. The clearly high demand for effective solutions to combat the problems rendered to infrastructure in NER deem it worthwhile to promote geotechnical textiles, as the traditional solutions used by State Departments and other project authorities are not as durable and require much more frequent maintenance compared to these modern and cost-effective technical textile solutions.

Successful implementation of the scheme and adoption of this technology and geotechnical textile material in most difficult terrains on a pilot scale will create a sustainable market for the geotechnical textiles products in the North East Region, as well as in the rest of the country, and also lead to the development of standards and specifications for geotechnical textile solutions for select areas.

The scheme has the following basic objectives

- i. To demonstrate use of geotechnical textiles as a modern cost-effective technology in the development of infrastructure in fragile geological conditions of NER;

-
- ii. To improve the durability, function and life of infrastructure in NER, while bringing down the life cycle cost of the projects;
 - iii. To promote the use of geotechnical textiles material and create a market for these products in the NER by inducing demand in infrastructure development;
 - iv. To stimulate investment and development of technical textile industry in the NER and rest of the country.

In addition to these objectives the scheme also intends to develop a set of standards and specifications for the products as well as the projects using these materials in pilot projects. The scheme will also develop literatures/manuals for inspection and testing and other aspects of constructions using these materials.

The ultimate objective of the scheme is to encourage adoption of modern, cost-effective technology in North East and other regions in the country on a large scale while improving the durability, function and life of infrastructure. The benefits would accrue from the demonstration effect, availability of new technologies, improved quality of infrastructure, ultimately leading to savings in cost and time in maintenance.

With increasing acceptability of geotechnical textiles, entrepreneurs are expected to set up geotechnical textiles production units in the NE region. The ultimate objective is to introduce modern cost-effective technology in NE development initiatives and also boost the economy of the country and NER in particular.

In order to promote and increase the usage of geotechnical textiles in civil engineering projects inter-alia road construction, slope protection and water reservoirs in the North Eastern Region, Ministry of Textiles has formulated a Scheme for Promoting Usage of Geotechnical textiles in the North Eastern Region, for five years from 2014-15 to 2018-19 with a financial outlay of Rs. 427 Crore.

2. SCHEME COMPONENTS

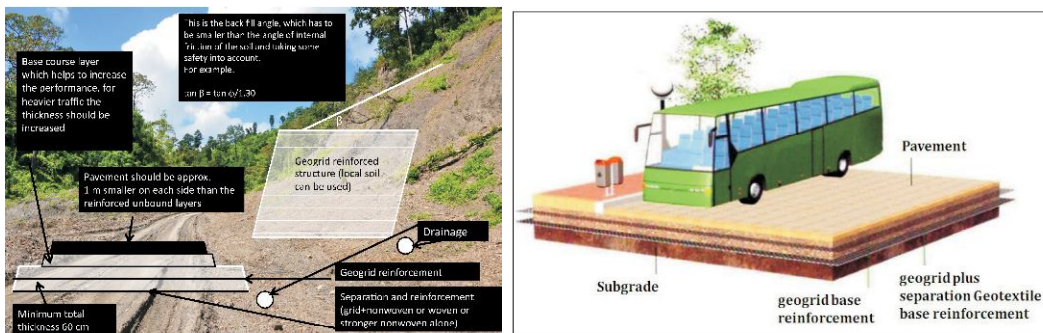
The scheme envisages the following components:

- (i) Component -I (Hard Interventions) with a total outlay of Rs 374 Cr
- (ii) Component –II (Soft Interventions) with a total outlay of Rs 43 Cr
- (iii) Component-III (Administrative Expenses) (Rs 10 Cr)

2.1. COMPONENT -I (HARD INTERVENTIONS) WITH A TOTAL OUTLAY OF RS 374 CR

This component will finance the incremental cost of pilot stretches of identified ongoing or new projects, due to application of geotechnical textile solutions, to be reimbursed to the State/Central Project Authorities for identified pilot projects. This component will have three subcomponents as mentioned in the previous section and will cover the following three major infrastructure projects in the NER:

- i. **ROAD CONSTRUCTION:** A huge scope for usage of geo-textiles in road applications exists, with potential benefits for both new roads as well as repairing of roads. The 8 PWDs of North Eastern states including Sikkim are responsible for over 88,000 kms of roads. The state network ranges from 41,395 kms in Assam to 1,889 kms in Sikkim. More than 70% of the roads are in poor condition and can benefit hugely from the introduction of Geo-textiles.



- ii. **HILL SLOPE PROTECTION:** The terrain and location of many roads, alongside ravines (hilly terrain) and rivers (flat terrain) causes risk of roads being subject to rock falls, landslides, flooding and other natural disasters. For controlling the rock falls and soil erosion, geo-textiles can be used



iii. **LINING OF WATER RESERVOIRS:** As NER is subject to annual heavy and erratic rainfall, water reservoirs will serve as effective storage solution to meet the future water demand during dry season. The stored water can subsequently be channeled through pipes or special streams in an eco-friendly fashion that does not harm the surrounding infrastructure.



2.2.COMPONENT –II (SOFT INTERVENTIONS) WITH A TOTAL OUTLAY OF RS 43 CR

This Component will support activities such as site inspection and techno economic viability studies, design solutions and DPR preparation, on-site monitoring and testing, specification formulation, training and capacity building, awareness campaigns, market development support, and evaluation studies, etc, to be carried out by agencies to be identified by the Central Government. This component will support the following sub-components:

Sub-component-1: Site inspection, Geotechnical textiles Solution Design, including hiring of experts and DPR preparation (Rs. 15 Crs)

The scheme will support identification of sites for introduction of geotechnical textiles-based solution on pilot basis by the Concerned COE in consultation with concerned Central/ State Project Authorities. Cost of design development incorporating geotechnical solutions, including viability studies, etc, and assessment of increment in project cost due to the use of geotechnical textiles will be supported under this sub-component.

Sub-component-2: On-site testing, creation of testing facilities and actual testing support to the projects (Rs. 8 Crs)

The scheme will support the COE for creation of testing facilities in the North East for providing inspection and testing support for the geotech material and installation thereof in the laboratories as well as on-site.

Sub-component-3: Workshops / Seminars / Training and Capacity Building, including Promotional efforts, etc (Rs. 2 Crs)

To create awareness on usage of Geotechnical textile products in the North-East region of the country through a series of awareness programmes and media publicity such as

- i. Organizing seminars / workshops;
- ii. Publication of articles on advantages of usage of Geotechnical textile products in local magazines, new publications focused towards infrastructure development;
- iii. Promotion of usage of Geotechnical textiles by participation in exhibitions;
- iv. Training and Capacity Building Programmes for key stakeholders;
- v. Any other activity related to the above objective

Sub-component-4: Specification formulation and product customization, simulation modeling, etc (Rs. 5 Crs)

This sub-component will cover establishment of quality parameters essential for Geotechnical textiles products usage in the North East Region, in terms of functional characteristics like strength, durability and longevity characteristics; Development of standards/manuals based on specifications; product customization and specification formulation for sustainable use of these products.

Sub-component-5: Market studies / User Manual/ Publications material, etc (Rs. 5 Crs)

The scheme will support creation of a knowledge base on the product through creation of technical literatures and case studies etc. for publication based on the experience gained during the project implementation for dissemination as well as market studies for the products and technologies and allied activities.

Sub-component-6: Market Development Support (Rs. 5 Crs)

Support under this sub-component will be for facilitating backward-forward market linkages to ensure availability, access and adequate consumption of geotechnical textile products in NER, while promoting the growth of entrepreneurs and support systems in this segment.

Sub-component-7: Scheme evaluation (Rs. 3 Crs)

Mid-term and end term evaluations of the scheme shall be carried out by reputed agencies for course correction and overall evaluation of the scheme.

2.3. COMPONENT-III (ADMINISTRATIVE EXPENSES) (RS 10 CR.)

An amount of Rs10.00 Cr has been set aside to finance the administrative expenses related to the scheme implementation and monitoring, considering the complexities and difficulties of administering and monitoring a multi-agency based scheme in the NER.

3. TARGETS FOR THE SCHEME COMPONENTS

Based on the indicative costs estimated by the Center of Excellence taking into account the experience of introduction of such materials in these infrastructure projects elsewhere in the country and considering the peculiarities of the NER the scheme envisages achieving the following physical and financial targets during the scheme implementation period. These targets are however, based on typical design specifications such as width of road and number of layers of geotechnical textile material expected to be used, or typical hill slopes; or size of reservoirs to be taken up, while actual design and sizes of pilot stretches/projects and therefore, their costs may vary substantially. The physical targets are therefore, indicative only and financial allocations for individual subcomponents indicated herein may also vary depending upon these variations and shall be reallocated inter se depending upon the actual projects and off take of various sub-components.

S. No.	Components	Physical Targets	Financial Targets (Rs. Crore)
1	Component-I (Hard interventions)		374.00
1.a	Sub-component-I Geotechnical textile solution for Road construction	300 km	150.00
1.b	Sub-component-II Geotechnical textile solution for Slope/hill protection	118 km	94.00
1.c	Sub-component-III Geotechnical textile solution for lining of water reservoirs	217 reservoirs*	130.00

S. No.	Components	Physical Targets	Financial Targets (Rs. Crore)
2	Component-II (Soft interventions)	-	43.00
2.a	Sub-component-1: Site inspection, Geotechnical textiles Solution Design, including hiring of experts and DPR preparation		15
2.b	Sub-component-2: On-site testing, creation of testing facilities and actual testing support to the projects		8
2.c	Sub-component-3: Workshops / Seminars / Training and Capacity Building, including Promotional efforts, etc		2
2.d	Sub-component-4: Specification formulation and product customization, simulation modeling, etc		5
2.e	Sub-component-5: Market studies / User Manual / Publications material, etc		5
2.f	Sub-component-6: Market Development Support		5
2.g	Sub-component-7: Scheme evaluation		3
3	Component – III (Administrative cost for implementation of the Scheme)	-	10.00
	Total Scheme Outlay		427.00

* Based on reservoir with dimensions: 100m * 100m * 3m (For reservoirs of different sizes the ceiling may be calculated on proportion basis)

4. IMPLEMENTATION OF THE SCHEME

Textiles Commissioner, Ministry of Textiles will be the nodal officer directly in charge of the scheme and OTXC will act as the Implementing Agency (IA) for the scheme. The scheme shall be implemented with the help of respective State Governments and Project Authorities concerned and the Technical Authorities such as Centre of Excellence for Geotech(BTRA/ATIRA) or any agency appointed by the Ministry of Textiles, Indian Road Congress, Central Water Commission, as well as nodal Ministries/Departments, such as Ministry of Road Transport and Highways etc.

5. FUND ALLOCATION

5.1. COMPONENT -I (HARD INTERVENTIONS) WITH A TOTAL OUTLAY OF RS 374 CR

Indicative costs for this component:

S. No.	Components	Financial Targets (Rs. Crore)
1	Component-I (Hard interventions)	374.00
1.a	Sub-component-I Geotechnical textile solution for Road construction	150.00
1.b	Sub-component-II Geotechnical textile solution for Slope / hill protection	94.00
1.c	Sub-component-III Geotechnical textile solution for lining of water reservoirs	130.00
	Total	374.00

The project authority will be free to dovetail financing of the project from any other scheme, including central plan assistance for its share of the project cost.

5.2. COMPONENT –II (SOFT INTERVENTIONS) WITH A TOTAL OUTLAY OF RS 43 CR

S. No.	Components	Financial Targets (Rs. Crore)
1.	Sub-component-1: Site inspection, Geotechnical textiles Solution Design, including hiring of experts and DPR preparation	15
2.	Sub-component-2: On-site testing, creation of testing facilities and actual testing support to the projects	8
3.	Sub-component-3: Workshops / Seminars / Training and Capacity Building, including Promotional efforts, etc	2
4.	Sub-component-4: Specification formulation and product customization, simulation modeling, etc	5
5.	Sub-component-5: Market studies / User Manual/ Publications material, etc	5
6.	Sub-component-6: Market Development Support	5
7.	Sub-component-7: Scheme evaluation	3
	Total	43.00

5.3. PROJECT COORDINATING AGENCY (PCA)

A Project Coordinating Agency (PCA) will be engaged for the scheme, and will do the onsite monitoring and ensure co-ordination among all partners and stakeholders of the scheme.

6. TOTAL COST OF THE SCHEME

Cost of Component - I :	Rs.374.00 Crs
Cost of Component - II:	Rs. 43.00 Crs
Cost of Component - III:	Rs. 10.00 Crs
Total Cost of the Scheme:	Rs.427.00 Crs

6.1. PROJECT ADMINISTRATION CHARGES

Project administration charges will include administrative/ concurrent Monitoring such as fee of engaging PCA, meeting expenses, local travel expenses, TA/DA expenses to Concerned COE, etc. A total of Rs 10 crs is estimated to be provisioned for administration expenses, at 2.34% of the total scheme cost of Rs 427 crores.

6.2. YEAR-WISE COSTS OF THE SCHEME

The scheme will be implemented for a period of 5 years starting from 2014 -15 to 2018 -19 period. **Year-wise schedule for financial costs to be incurred:-**

Sub-Component\Year	2014-15	2015-16	2016-17	2017-18	2018-19	Total
Geotechnical textiles Solution Design and hiring of experts, DPR preparation training and capacity development among relevant state departments including site visits, etc	1.5	3.5	3.5	3.5	3.0	15
On-site testing, creation of testing facilities and actual testing support to the projects	1.5	2.0	2.0	2.0	0.5	8
Workshops / Seminars / Promotional efforts, etc	0.2	0.5	0.5	0.5	0.3	2
Specification formulation and product customization, simulation modeling, etc	0.3	2.0	2.0	0.5	0.2	5
Market studies / User Manual/ Publications material, etc	0.5	1.0	0.5	1.5	1.5	5
Market Development Support	0.5	1.5	1.5	1.0	0.5	5
Independent evaluation (mid-term and end term) of the Scheme	-	-	0.5	0.5	2.0	3
Total	4.5	10.5	10.5	9.5	8.0	43

Component\Year	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Non – recurring expenses (Expenditure incurred on procurement and installation of Geotechnical textiles for roads, slope protection and water reservoir)	20.5	93.8	121	93.2	45.5	374
Recurring expenses (Expenditure incurred on DPR preparation and subsequent analysis, seminars, workshop, Independent Evaluation, capacity building, etc. including administrative expenses)	5.0	13.5	13.0	11.5	10	53
Total	25.5	107.3	134	104.7	55.5	427

Implementation of the scheme is dependent upon the identification of pilot projects by the Central/ State project authorities in NER and would also depend on the geotechnical textile solution designs for such projects. Therefore, the above year-wise cost estimation for each component may require re-appropriation during scheme implementation period within the overall approved budget with the approval of the Empowered Committee. The actual allocation of funds will be based on demand and availability of viable projects in NER.

S. Jayashree
16/03/2015

(Jayashree Sivakumar)

Under Secretary to the Government of India

To

As per list attached

List of Addresses

1. Director, ATIRA / BTRA
2. Jt. Textiles Commissioner, OTXC, Mumbai
3. Secretary, DoNER / MoWR, RD & GR / MoRTH / DoE / MoRD
4. Director General, Border Roads Organization
5. DS(IFW), Ministry of Textiles
6. Chief Secretaries of North East States

OPERATIONAL GUIDELINES FOR SCHEME FOR PROMOTING USAGE OF GEOTEXTILES IN NORTH EAST REGION

The following operational guidelines shall be followed for implementation of the scheme:

7. SCHEME IMPLEMENTATION AND MONITORING AUTHORITIES

7.1. The scheme will be implemented under the direct supervision of Textiles Commissioner, Mumbai, who will be the implementing agency for the scheme. The office of Textiles Commissioner will closely work with the respective Central/State Project Authorities and other user Ministries, DONER , Centres of Excellence (COE) set up under Technology Mission on Technical Textiles (TMTT) or any agency appointed by the Ministry of Textiles, ITTA, manufacturers/suppliers of geotechnical textiles and other stakeholders for meeting scheme objectives

7.2. The following agencies will aid and assist the Textile Commissioner in implementation of the scheme:

- a) Concerned COE i.e. BTRA/ATIRA or any agency appointed by the Ministry of Textiles, will provide technical inputs/support for implementation of the scheme at every stage along with external experts / consultants, including providing geotechnical textiles solution design services. Technical institutes / international consultants may be involved for providing technical guidance and support wherever necessary. Other COEs and any other agencies like IITs/Technical Institutions etc may also collaborate with the concerned COEs for implementation of scheme.
- b) A Project Coordinating Agency (PCA) will be engaged for providing administrative and monitoring support for implementation of the scheme. PCA will do the onsite monitoring and ensure coordination among partners of the project, including State Governments, Centers of Excellence (COE), contractors, Geotechnical textiles vendors and consultants, technical institutes, etc.
- c) The technical institutes/international consultants may be involved as and when required for providing technical guidance, including design specification, DPR preparation, etc.

7.3. The project will be managed and monitored through a two-level appraisal and approval process, as follows: (i) Apex Monitoring Committee at Centre/GoI level and (ii) State Level Coordination Committee at state level. Overall management and monitoring of the scheme will be done by the Empowered Committee headed by Secretary (Textiles).

7.3.1. State Level Coordination Committee (SLCC)

A State-level Coordination Committee shall be constituted in each State under the Chairmanship of Commissioner/ Secretary, as may be suggested by the respective State Governments, along with representatives from concerned departments, including central project authorities. This committee will appraise the pilot stretches of on-going and new projects in the state which could be taken up under the scheme for implementation and recommend the same to the Apex Monitoring Committee for approval. The composition of the SLCC shall be as follows:

1.	Secretary / Commissioner level officer as nominated by State Government	Chairman
2.	Representatives from Central Govt./ State Govt. Departments/ Ministries such as PWD, BRO, Water Resources, Rural Development (as the case may be) etc	Member
3.	Representative from Office of Textiles Commissioner	Member
4.	Representative from ATIRA, Gujarat (COE)	Member Secretary
5.	Representative from BTRA, Mumbai (COE)	Member
6.	PCA	Coordinator

The chairman may co-opt subject matter specialist from industry / academics as per requirement.

Terms of reference of the committee:

1. State-Level Coordination Committee will appraise the suitable projects for application of geotechnical textile solutions and recommend them to Apex Monitoring Committee for approval.
2. State-Level Coordination Committee will also mobilize various departments of State Govt. to identify and recommend projects for usage of Geotechnical textiles. Committee will ensure the inclusion of Geotechnical textile solution in the DPR of the identified project.
3. Monitor the project and submit the progress report to OTXC / AMC.
4. Any other matter as may be approved by the AMC from time to time or any other related matter

7.3.2. Apex Monitoring Committee (AMC)

The AMC at the Central level, headed by Joint Secretary (Technical Textiles, Ministry of Textiles, Govt. of India), will consider and approve, the projects with additional/incremental cost up to Rs 1.00 Crore. In addition to the above AMC will also monitor implementation of the NE Geotech projects and achievement of set targets. AMC will also monitor funds utilization and release of funds to PCA for all its activities and deliverables, as well as the final installment to Project Authorities after successful completion of pilot projects. The composition of the Committee shall be as under:

1.	Joint Secretary, Technical Textiles, Ministry of Textiles, Govt. of India	Chairman
2.	Textiles Commissioner	Member
3.	Representatives from Central Govt./State Govt. Departments/ Ministries such as PWD, Road, Water Resources, BRO, etc. as the case may be (where the project is implemented) as per the nomination of Secretary/ Commissioner - not below the rank of Director	Member
4.	Director, Technical Textiles, Ministry of Textiles, Govt. of India	Member
5.	Representative of DONER not below the rank of Director	Member
6.	Representative of IFW, Ministry of Textiles	Member
7.	Director, ATIRA, Gujarat (COE)	Member
8.	Project Co-coordinating Agency	Co-ordinator
9.	Director, BTRA, Mumbai (COE)	Member
10.	Joint Textile Commissioner handling Technical Textiles,OTXC	Member Secretary

The chairman may co-opt subject matter specialist from industry / academics as per requirement.

Terms of Reference:

- a) Proper implementation of the NE Geotech projects
- b) The Committee will approve the projects for application of Geotech
- c) Achievement of set targets;

- d) Efficient utilization of funds, approving the release of funds to PCA for all its activities and deliverables, as well as the final installment to Project Authorities after certified and successful completion of pilot projects; and,
- e) Any other related matter.

7.3.3. Empowered Committee

The Empowered Committee, chaired by the Secretary (Textiles) would manage and monitor the overall progress and implementation of the NER scheme. The EC will approve all projects with additional cost above Rs 1.00 cr.

The powers of EC will include following, but not limited to:

- a) Sanction additional cost of 2.5% extra over and above the ceiling of 15% in certain cases for reasons to be recorded and all cost escalations
- b) Within the overall approved budget of the scheme, the Empowered Committee will also have the powers to re-appropriate funds across each components and sub-components based on demand and availability of viable projects in NER.
- c) Modify the guidelines of the scheme, as per the requirements emerged during implementation of the scheme
- d) Delegate the powers to AMC, as deemed appropriate and necessary for smooth implementation
- e) Any other changes as deemed appropriate during scheme implementation, beside changes decided by SFC, with detailed justification to be recorded.

The composition of the Empowered Committee shall be as under:

1.	Secretary (Textile)	Chairman
2.	AS&FA, Ministry of Textiles	Member
3.	JS, Ministry of Textiles (handling technical textile)	Member
4.	Textile Commissioner	Member Secretary
5.	Representatives of DONER (not below the rank of Joint Secretary)	Member
6.	Representatives of Ministry of Water Resources, (not below the rank of Joint Secretary) / Representatives of Ministry of Road Transport and Highways (not below the rank of Joint secretary)/ Representatives of Ministry of Rural Development (not below the rank of Joint secretary)/Representatives of BRO (not below the rank of Joint secretary) as the case may be	Member

7.	COE BTRA/ATIRA	Member
8.	Project Co-ordinating Agency	Co-ordinator
9.	Representatives from Dept. of Expenditure, Ministry of Finance (not below the rank of Joint Secretary)	Member

The chairman may co-opt subject matter specialist from industry / academics or any institution as per the requirement.

The Committee may meet from time to time to monitor the progress of the scheme and sort out inter ministerial/departmental issues, including funds reallocation between different scheme components and activities, and issue such direction to various implementing agencies as may be required.

8. SCHEME COMPONENTS

8.1. Component –I: Geotechnical Textile Solution (Hard interventions) with a total outlay of Rs 374 Cr

This component will finance the incremental cost of pilot stretches of identified ongoing or new projects, due to application of geotechnical textile solutions, to be reimbursed to the State/Central Project Authorities for identified pilot projects. This component will have three subcomponents as mentioned in the previous section and will cover the following three major infrastructure projects in the NER:

1. Road Construction
2. Hill Slope Protection
3. Lining of water reservoirs

8.1.1. Eligible Agencies:

Project Authority from the following mentioned stakeholders would be eligible to seek assistance under this component:

- a) North Eastern State Government departments such as PWD, Water Resources, Irrigation departments, Rural Development, Soil and Water Conservation, etc
- b) Central Ministries inter-alia Ministry of Road Transport & Highways, National Highway Authority of India, Ministry of Water Resources, Central Water Commission, Border Road Organization, Ministry of Rural Development, etc

8.1.2. Operational Modalities

The operational modalities for identifying and implementing pilot projects shall be inter-alia as follows:

-
- a) Project authorities will identify the pilot projects/stretchers in the ongoing or new projects where geotechnical textiles can be introduced
 - b) The Project authority will submit a proposal to State-Level Coordination Committee for appraisal.
 - c) The concerned Project Authority will prepare the Detailed Project Report for the Pilot stretch/Pilot project based on the traditional/conventional method to arrive at the original estimated project cost. The cost of the DPR preparation will be funded by the Project Authority.
 - d) Concerned COE or any agency appointed by the Ministry of Textiles will inspect the proposed site and conduct necessary techno-economic viability study (TEV).
 - e) Other COEs and any other agencies like IITs/Technical Institutions etc may also collaborate with the concerned COEs or any agency appointed by the Ministry of Textiles to carry out activities under this component.
 - f) The Concerned COE or any agency appointed by the Ministry of Textiles will redesign the project by introducing the geotechnical textile solution depending on the peculiarities of the project or specifications of the pilot stretch. If necessary, the Concerned COE or any agency appointed by the Ministry of Textiles may take the help of external experts for design development and geotech solution, and will prepare a revised Detailed Project Report based on geotech solution. The cost of preparation of DPR will be funded from the scheme by Central Government
 - g) The financial support to the project authority to meet the incremental cost over and above the original cost of the pilot stretch due to usage of geotechnical textiles will be restricted to 15% of the original project cost of the pilot stretch/pilot project for Road and Hill slope protection projects. However, the Empowered Committee, constituted for implementation of this scheme, chaired by Secretary (Textiles) may consider additional support of 2.5% in deserving cases for reasons to be recorded.
 - h) In case of Reservoir lining projects, the financial support under the scheme shall be restricted to the cost of geotechnical textiles material as per the design solution to be provided by the technical experts/ Concerned COE or any agency appointed by the Ministry of Textiles for this purpose, subject to a ceiling of Rs 60.00 lakhs per reservoir with dimensions of 100m * 100m * 3m. For reservoirs of different sizes, the ceiling may be calculated on proportionate basis.

-
- i) Project Authority will float tender for design and material suppliers for implementing a project on the selected DPR. The process of tendering and evaluation of the bids as per the technical design solutions provided by the COE or any agency appointed by the Ministry of Textiles will be carried out by the respective Project Authorities as per their standard procedure with the technical support of the Concerned COE or any agency appointed by the Ministry of Textiles.
 - j) Concerned COE or any agency appointed by the Ministry of Textiles will provide technical guidance, site inspection and testing support, including material testing, during the project implementation period as per the design provided.
 - k) The Project Authority will be free to dovetail financing of the project from any other scheme, including Central Plan assistance for its share of the project cost.
 - l) Since most of the major road network in the border areas in the NER are handled by BRO, priority shall be given to the projects being executed by BRO for the pilot projects in road construction
 - m) As indicated above, the financial support under the scheme shall be subject to ceilings indicated therein. However, in case of cost over run due to technical reasons (not due to delay in project implementation or any non-technical reasons), the support under the scheme shall be restricted to the ceiling prescribed above based on the revised cost estimates for the pilot projects after they are evaluated by the Concerned COE or any agency appointed by the Ministry of Textiles.
 - n) Beneficiary shall open and maintain an exclusive Escrow Account for the scheme.

Note:

1. *Projects with additional cost component to be funded by the Central Govt. from this scheme up to a limit of Rs1.00 Crore will be appraised by the State-level Coordination Committee (SLCC), and will be submitted to the AMC for consideration and approval provided the additional cost is within the aforementioned ceilings*
2. *Projects with additional cost component above Rs1.00 Crore and any project where the additional cost exceeds the aforementioned ceilings will be submitted to the Empowered Committee for consideration.*

-
3. *If the project has to be abandoned by Project Authority due to any reason beyond the control of Project Authority, the cost incurred under the scheme upto that stage will be written-off, with the approval of Empowered Committee.*

8.1.2.1 For establishment of pilot projects demonstrating geotechnical textiles solution applications

1. State and Central Government project authorities will identify viable projects for intervention under the scheme in consultation with concerned COE or any agency appointed by the Ministry of Textiles.
2. The concerned project authority will prepare the DPR (DPR 1) based on conventional solution. Cost of DPR to be funded by Central/State Project Authority such as State Government PWD and Soil and Water Conservation Departments, and Central agencies, like NHAI, BRO, etc.
3. DPR 1 will be the basis for examination by COE or any agency appointed by the Ministry of Textiles and preparation of second DPR incorporating geotechnical textile solution (DPR 2). The cost of preparation of DPR 2 will be funded under the scheme. DPR 2 would also include the bid specifications for geotechnical textile materials for floating tender.
4. DPR 1 (conventional solution) will be compared with DPR 2 (technical textiles-based solution). The incremental cost, i.e. difference between DPR2 and DPR 1, will be borne under the scheme as per the illustrations below:
 - i. $DPR\ 1 < DPR\ 2$: Example, $100 < 110$. Rs 100 by Project Authority; Rs 10 Central Govt. Hence, technical and financial support from Central Govt.
 - ii. $DPR1 = DPR2$: Cost entirely by Project Authority. Technical support from Central Govt
 - iii. $DPR\ 1 > DPR\ 2$: Savings accrued to Project Authority. Technical support from Central Govt
5. Tender to be floated by the Project Authority based on bid specifications in DPR 2 with technical assistance from concerned COE or any agency appointed by the Ministry of Textiles.

Tender evaluation will be done by a Committee consisting of State/Central Project Authority with technical assistance from concerned COE or any agency appointed by the Ministry of Textiles.

8.1.3. Eligible fund support

S. No.	Description	Estimated Costs (in Rs Lakhs)
1	Component I – Geotechnical textile Solution (Hard interventions)	37,400

Fund disbursement decisions under the above eligible support for pilot projects shall be as under:

Road and Hill slope protection projects	The financial support to meet the incremental cost over and above the original cost of the pilot stretch due to usage of geotechnical textiles will be restricted to 15% of the original project cost of the pilot stretch / pilot project
Water Reservoir lining projects	The financial support under the scheme shall be restricted to the cost of geotechnical textiles material as per the design solution to be provided by the technical experts/ Concerned COE or agency appointed by the Ministry for this purpose, subject to a ceiling of Rs 60.00 lakhs per reservoir of 100m * 100m * 3m size. For reservoirs of different sizes the ceiling may be calculated on proportion basis.

Note: The Empowered Committee, constituted for implementation of this scheme, chaired by Secretary (Textiles) may consider additional support of 2.5% in deserving cases for reasons to be recorded.

8.1.4. Release of Funds

Funds will be reimbursed to the Project Authority concerned in two stages, as follows:

Proportion of project cost borne by scheme	Fund release to relevant Project Authority	Fund release approval authority
50%	After delivery of geotechnical textile material to the pilot project site and testing / certification by Concerned COE	Office of Textile Commissioner
50%	After completion of the pilot project certified by Concerned COE and site engineer	Apex Monitoring Committee

8.2. Component –II (Soft Interventions) with a total outlay of Rs 43 Cr

This Component will support activities such as site inspection and techno economic viability studies, design solutions and DPR preparation, on-site monitoring and testing, specification formulation, training and capacity building, awareness campaigns, market development support, and evaluations studies, etc. to be carried out by agencies to be identified by the Central Government. This component will support the following Sub-Components:

8.2.1. Sub-component-1: Site inspection, Geotechnical textiles Solution Design, including hiring of experts and DPR preparation

The scheme will support identification of sites for introduction of geotechnical textiles based solution on pilot basis by the Concerned COE or any agency appointed by the Ministry of Textiles in consultation with concerned Central/State Project Authorities. Cost of design development incorporating geotechnical solutions, including viability studies, etc, and assessment of increment in project cost due to the use of Geotechnical textiles will be supported under this sub-component.

8.2.1.1. Eligible Agencies

Concerned COE (BTRA/ATIRA) or any agency appointed by the Ministry of Textiles will be eligible to conduct visits to evaluate sites for pilot project proposals, and may engage the expertise of national/international consultants for designing appropriate geotechnical textiles solutions and for preparing the corresponding DPRs. Other COEs and any other agencies like IITs/Technical Institutions etc may also collaborate with the concerned COEs or any agency appointed by the Ministry of Textiles to carry out activities under this component.

8.2.1.2. Operational Modalities

The operational modalities for identifying and implementing pilot projects shall be inter alia as follows:

- a) Project authorities will identify the pilot projects/stretchches in the ongoing or new projects where geotechnical textiles can be introduced
- b) The Project authority will submit a proposal to State-Level Coordination Committee for appraisal, which will then forward the proposal to Concerned COE or any agency appointed by the Ministry of Textiles. Concerned COE or any agency appointed by the Ministry of Textiles will inspect the proposed site and conduct necessary techno-economic viability study (TEV). Concerned COE or any agency appointed by the Ministry of Textiles may submit the recommendations of TEV to SLCC, which will decide whether a geotechnical textile solution design and accompanying DPR may be prepared.

-
- c) Based on the decisions resulting from the feasibility study, the Concerned COE or any agency appointed by the Ministry of Textiles will design the geotechnical textiles solution, using the inputs of national/international experts, as and when necessary. The solution design will be submitted to SLCC.
 - d) SLCC will finalize upon the solution design submitted by Concerned COE or any agency appointed by the Ministry of Textiles based on which revised DPR incorporating geotechnical textile solution will be drafted and submitted to Project Authority.
 - e) Project Authority will choose the solution design and accompanying DPR. In the event the Project Authority selects the geotechnical textile solution, the original proposal, revised solution design and revised DPRs will be forwarded to the Apex Monitoring Committee for approval.
 - f) Concerned COE or any agency appointed by the Ministry of Textiles in consultation with international experts, will finalize the specification and quantity of the material along with the eligibility criteria
 - g) Project Authority will float tender for design and material suppliers for implementing a project on the selected DPR. The process of tendering and evaluation of the bids as per the technical design solutions provided by the COE will be carried out by the respective Project Authorities as per their standard procedure with the technical support of the Concerned COE or any agency appointed by the Ministry of Textiles.
 - h) Only the manufacturers who follow GMP (Good Manufacturing Practices) practices duly authenticated by Appropriate Authority will be permitted to participate in the tender process. Project Authority will scrutinize and clear the technical bids with technical inputs from Concerned COE or any agency appointed by the Ministry of Textiles.
 - i) Concerned COE or any agency appointed by the Ministry of Textiles shall open and maintain an exclusive Escrow Account for the scheme.
 - j) Utmost economy to be observed while formulation of DPR and allied activities.
 - k) Concerned COE or any agency appointed by the Ministry of Textiles shall constitute a Committee at their level to carryout the activities under the scheme and shall follow GFR procedures.
 - l) Concerned COE or any agency appointed by the Ministry of Textiles shall submit a detailed procedure to carry out the activities like Site inspection, Geotechnical textiles Solution Design, including hiring of experts and DPR preparation to AMC for its perusal and suggestions, if any.

8.2.1.3. Eligible fund support

S. No.	Description	Estimated Costs (in Rs Lakhs)
1	Site inspection, Geotechnical textiles Solution Design, including hiring of experts and DPR preparation	1500

8.2.1.4. Release of Funds

Funds may be released to the incumbent agencies as per the following schedule:

Installment 1	20% of the eligible fund support	Released by OTXC to Concerned COE or any agency appointed by the Ministry of Textiles at scheme approval
Installment 2	30% of the eligible fund support	Submission of UC for installment 1 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The 2 nd installment shall be released after approval of report of first installment by AMC.
Installment 3	30% of the eligible fund support	Submission of UC for installment 2 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The 3 rd installment shall be released after approval of report of 2 nd installment by AMC.
Installment 4	20% of the eligible fund support	Submission of UC for installment 3 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The fourth installment shall be released after approval of report of 3 rd Installment by AMC and completion of projects

8.2.2. Sub-component-2: On-site testing, creation of testing facilities and actual testing support to the projects

The scheme will support the Concerned COE or any agency appointed by the Ministry of Textiles in creation of testing facilities in the North East Region that will inspect and test the supply of geotechnical textile material, as well as its installation thereof, in the testing laboratories as well as on-site on the pilot project sites. Other COEs and any other agencies like IITs/Technical Institutions etc may also collaborate with the concerned COEs or any agency appointed by the Ministry of Textiles to carry out activities under this component.

8.2.2.1. Eligible Agencies

Concerned COE or any agency appointed by the Ministry of Textiles will establish testing facilities in the North East Region to evaluate geotechnical textile material, and inspect and test its installation, through laboratory tests, as well as through periodic site inspections during pilot project implementation.

8.2.2.2. Operational Modalities

The operational modalities for this sub-component shall be inter alia as follows:

- a) Concerned COE or any agency appointed by the Ministry of Textiles will establish at least one testing facility in NER to facilitate supply, and to test the installation of, geotechnical textile materials in the pilot projects. Such a facility will be equipped with the necessary machinery for conducting laboratory tests, as well as on-site tests at pilot project sites
- b) The testing facility will be maintained and operated by senior-level scientists and engineers, and will eventually also be equipped to provide capacity-building support to State Government engineers and relevant officers on the maintenance and application of geotechnical textile material
- c) The aforementioned scientists and engineers will also be expected to travel to each pilot project site to ensure proper installation and use of geotechnical textile materials, as well as to provide on-ground support to Project Authorities and other construction agencies on the application of geotechnical textile materials
- d) Although the number of evaluations of the technical aspects of the geotextile material and the pilot project may vary by each pilot project, Concerned COE or any agency appointed by the Ministry of Textiles is expected to provide evaluation reports at the following milestones:
 - i. Test suitability of geotechnical textile material: At time of delivery of geotechnical textile material by selected vendors at project site, and prior to installation of geotechnical textile material
 - ii. Evaluate readiness of pilot project for introduction of geotechnical textile material: Immediately prior to installation of geotechnical textile material

- iii. Evaluate installation of geotechnical textile material: Immediately following installation of geotechnical textile material at pilot project
- iv. Evaluate functionality and maintenance of geotechnical textile material in pilot projects: A suitable duration after completion of pilot project
- e) Concerned COE or any agency appointed by the Ministry of Textiles will submit progress and evaluation reports on the operations of the NER testing facilities, and on each of the pilot projects to OTXC, SLCC and AMC, as needed as per the above-mentioned milestones

8.2.2.3. Eligible fund support

S. No.	Description	Estimated Costs (in Rs Lakhs)
1	On-site testing, creation of testing facilities and actual testing support to the projects	800

The eligible fund support of Rs 800 lakhs incorporates both the operational, as well as capital, expenses for the NER testing facility. As per directive of Empowered Committee, funds may be advanced to Concerned COE or any agency appointed by the Ministry of Textiles for covering initial costs for establishment of testing facilities, as well as for the procurement of testing equipment. Costs for travel, lodging, etc, of scientists and engineers, Operational cost etc from Concerned COE or any agency appointed by the Ministry of Textiles will be borne under this header, and will be reimbursed to Concerned COE or any agency appointed by the Ministry of Textiles on actual-cost basis.

8.2.2.4. Release of Funds

Funds may be released to the incumbent agencies as per the following schedule:

Installment 1	40% of the eligible fund support	Released by OTXC at scheme approval and after approval of DPR for creation of testing facilities and operational cost by AMC.
Installment 2	30% of the eligible fund support	Submission of UC for installment 1 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The 2 nd installment shall be released after approval of report of first installment by AMC.

Installment 3	20% of the eligible fund support	Submission of UC for installment 2 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The 3 rd installment shall be released after approval of report of 2 nd installment by AMC.
Installment 4	10% of the eligible fund support	Submission of UC for installment 3 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The fourth installment shall be released after approval of report of 3 rd Installment by AMC and completion of work.

8.2.3. Sub-component-3: Workshops / Seminars / Training and Capacity Building, including Promotional efforts, etc

The scheme will focus on creating awareness on usage of geotechnical textile products in the North-East region of the country through a series of awareness programmes and media publicity, including

- i. Organizing seminars / workshops;
- ii. Publication of articles on advantages of usage of geotechnical textile products in local magazines, news publications focused towards infrastructure development;
- iii. Promotion of usage of geotechnical textiles by participation in exhibitions;
- iv. Training and capacity building programmes for key stakeholders;
- v. Any other activity related to the above objective

8.2.3.1. Eligible Agencies

The following agencies will be eligible to take up the awareness campaigns under the scheme which will be funded from relevant heads under sub-component-3 of Component-2:

- i. Textile Research Associations and Centers of Excellence
- ii. Regional OTXC

iii. Reputed Industry Associations assisting the industry in organization of awareness campaigns such as FICCI, ICC, CII, IRC, Indian Chapter of International Geosynthetic Society (IGS), Central Board of Irrigation and Power(CBIP) and ITTA, etc

iv. Engineering and Textile Universities and Research Organizations

Any one or more such eligible agencies may submit a proposal with the theme and outline of the campaign to the Office of the Textiles Commissioner ..

8.2.3.2. Operational Modalities

The operational modalities for organizing awareness campaigns shall be inter alia as follows:

- a) Modes of awareness campaigns to be adopted for a particular State and basis for the entire NER States will be finalized by the OTXC in consultation with the COEs or any agency appointed by the Ministry of Textiles, SLCC and other stakeholders from time to time.
- b) The calendar for these events/campaigns shall be finalised well in advance and publicized widely.
- c) Eligible agencies as at para 8.2.3.1 above will be asked to prepare a detailed proposal on the structure and contents of the awareness campaigns by the means of seminars/ workshops/ road shows/ exhibitions/ Training and Capacity Building and combinations thereof.
- d) Programme schedule along with all relevant details such as structure and contents of the awareness campaigns will be submitted to the OTXC for approval . After the approval, the proposing agency will be asked to execute the proposal submitted.
- e) Agencies will also be responsible for post event/campaign report, follow-up and feedback to the implementing agency on the effectiveness of the campaign.
- f) A schedule of activities carried out in the year will be submitted to AMC for its perusal.

8.2.3.3. Eligible fund support

Total fund support under this component is as follows:

S. No.	Description	Estimated Costs (in Rs Crores)
1	Workshops / Seminars / Training and Capacity Building, including Promotional efforts, etc	2.00

Funding under this activity would be used both centrally by Ministry of Textiles for media/publicity activities/ Training and Capacity Building, as well as at the regional level. Funding to the eligible agencies for awareness campaign under this scheme shall be as under:

- i. Funding for this activity will be on actual expenditure basis subject to an upper ceiling:
- ii. Upper ceiling for organizing road-shows/promotional efforts using print media, multimedia, radio, online platforms etc. shall be Rs. 3 lakhs per individual activity/ event.
- iii. Upper ceiling for organizing State level seminars/ workshops/ Training and Capacity Building shall be Rs. 4 Lakhs per event/activity. However, upper ceiling for seminars/ workshops involving entire North East shall be Rs 5 Lakhs per event/activity
- iv. Upper ceiling for organising exhibitions shall be Rs 5 Lakhs for State level exhibitions and Rs. 10 lakhs for NER exhibitions per exhibition/event.
- v. Upper ceilings for content design, programme recording and airing the campaign on All India Radio and FM channels in the NER shall be Rs 3 Lakhs per campaign.
- vi. Upper ceiling for content design, programme recording and airing Programmes and talk shows on television (DD) may be eligible for fee upto Rs 10 Lakhs per show.

The above upper ceilings may however, be relaxed by the AMC on the recommendations of the Textile Commissioner on merit for specific events.

8.2.3.4. Release of Funds

OTXC would directly release the payment to the concerned agency based on the satisfactory completion of the task. .

8.2.4. Sub-component-4: Specification formulation and product customization, simulation modeling, etc

This sub-component will cover establishment of quality parameters and formulation of specifications essential for usage of geotechnical textiles products in the North-eastern region in terms of functional characteristics like strength, durability and longevity characteristics. The scheme will also result in the development of standards/ manuals based on these specifications, as well as simulation modeling and the customization of products used in NER

8.2.4.1. Eligible Agencies

Concerned COE or any agency appointed by the Ministry of Textiles will identify the quality parameters, develop the specifications and corresponding manuals, and conduct the necessary simulation modeling to advise on the development of geotechnical textile

products customized to the geoclimatic conditions and topographical terrain of North East Region. Other COEs and any other agencies like IITs/Technical Institutions etc may also collaborate with the concerned COEs or any agency appointed by the Ministry of Textiles to carry out activities under this component.

8.2.4.2. Operational Modalities

The operational modalities for this sub-component shall be inter alia as follows:

- a) Concerned COE or any agency appointed by the Ministry of Textiles will define specifications for geotechnical textile products used in pilot projects during the project proposal and DPR formulation stages. Concerned COE or any agency appointed by the Ministry of Textiles will assist SLCC at the time of project preparation/approval and implementation.
- b) Concerned COE or any agency appointed by the Ministry of Textiles will routinely conduct simulations of geotechnical textile products used in NER pilot projects to study their effectiveness, and design quality assessment parameters, along with specifications and corresponding user manuals, based on these simulations and other evaluations of pilot project sites.
- c) COE or any agency appointed by the Ministry of Textiles may publish the findings of above activities, case studies and follow GFR procedures for publishing wherever applicable.
- d) COE or any agency appointed by the Ministry of Textiles may formulate new standards/amend existing standards for Geotextiles based on their experience / requirement during the pilot project implementation through BIS, if required.
- e) Concerned COE or any agency appointed by the Ministry of Textiles will submit detailed proposal for such activities along with expected outcome, schedule of activities, associated agencies and facilities available to carry out such activities, coverage of pilot projects to be studied and estimated cost to OTXC for approval. At the end of the project COE or any agency appointed by the Ministry of Textiles will produce the expenditure details along with documentary evidence for above activities to OTXC.
- f) Concerned COE or any agency appointed by the Ministry of Textiles shall submit a detailed procedure to carry out the above activities to AMC for its perusal and suggestions, if any.
- g) A complete progress of the activities shall be submitted to AMC for information from time to time.

8.2.4.3. Eligible fund support

S. No.	Description	Estimated Costs (in Rs Lakhs)
1	Specification formulation and product customization, simulation modeling, etc	500

8.2.4.4. Release of Funds

Funds may be released to the incumbent agencies as per the following schedule:

Installment 1	10% of the eligible fund support	Released by OTXC at scheme approval
Installment 2	40% of the eligible fund support	Submission of UC for installment 1 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The 2 nd installment shall be released after approval of report of first installment by AMC.
Installment 3	30% of the eligible fund support	Submission of UC for installment 2 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The 3 rd installment shall be released after approval of report of 2 nd installment by AMC.
Installment 4	20% of the eligible fund support	Submission of UC for installment 3 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The fourth installment shall be released after approval of report of 3 rd Installment by AMC and completion of work.

8.2.5. Sub-component-5: Market studies / User Manual/ Publications material, etc

The scheme will support creation of a knowledge base on the product through creation of technical literatures and case studies etc. for publication based on the experience gained during the project implementation for dissemination as well as market studies for the products and technologies and allied activities. The aim of this sub-component of the scheme is to create appropriate user manuals and other publication materials such as leaflets/pamphlets, posters, etc. for the use of all the stakeholders involved and to conduct market studies for the products and publish such reports which may be useful for further policy decision by the Govt. and investment decision by the investors.

8.2.5.1. Eligible Agencies

Concerned COE or any agency appointed by the Ministry of Textiles will be responsible for preparation of user manual and other publication material to support the awareness program during the implementation of the scheme. Concerned COE or any agency appointed by the Ministry of Textiles shall also organize market studies and prepare market study reports to be submitted to the GOI from time to time. PCA would assist Concerned COE or any agency appointed by the Ministry of Textiles in this activity. Other COEs and any other agencies like IITs/Technical Institutions etc may also collaborate with the concerned COEs or any agency appointed by the Ministry of Textiles to carry out activities under this component.

8.2.5.2. Operational Modalities

Proposals will be submitted by Concerned COE or any agency appointed by the Ministry of Textiles to OTXC for these requirements from time to time depending upon the actual requirements of these activities for its approval by OTXC. Once the proposal is approved by OTXC, Concerned COE or any agency appointed by the Ministry of Textiles will follow the procedures laid down in GFR of Government of India for all procurement and printing activities for such manuals and other material etc, wherever applicable. The user manuals and other such documents for geotechnical textiles products shall also be published in local North Eastern State's languages for beneficial use of the stakeholders.

- A complete progress of the activities shall be submitted to AMC for information from time to time.

8.2.5.3. Eligible Fund support and Release of Funds

Total fund support under this sub-component is as follows:

S. No.	Description	Estimated Costs (in Rs Lakhs)
1	Market studies / User Manual/ Publications material, etc.	500

8.2.5.4. Release of funds

Funds may be released to the incumbent agencies as per the following schedule:

Installment 1	10% of the eligible fund support	Released by OTXC at scheme approval
Installment 2	40% of the eligible fund support	Submission of UC for installment 1 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The 2 nd installment shall be released after approval of report of first installment by AMC.
Installment 3	30% of the eligible fund support	Submission of UC for installment 2 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The 3 rd installment shall be released after approval of report of 2 nd installment by AMC.
Installment 4	20% of the eligible fund support	Submission of UC for installment 3 along with audited expenditure statement and report of activities carried out with full justification for expenditure. The fourth installment shall be released after approval of report of 3 rd Installment by AMC and completion of work.

8.2.6. Sub-component-6: Market Development Support

Support under this sub-component will be for facilitating backward-forward market linkages to ensure availability, access and adequate consumption of geotechnical textile products in NER, while promoting the growth of entrepreneurs and support systems in this segment. The aim of this sub-component under the scheme is to provide assistance to indigenous manufacturers and stakeholders of geotextiles products to showcase their products and its utility in NER. The activities under this sub-component are targeted at apprising institutional buyers, key stakeholders, etc, about the technical specifications and other quality parameters required for meeting the particular requirements of NER, which can be addressed using geotechnical textiles solutions Buyer Seller meets shall be organized under this Component in NER/Kolkata wherein Technical Textile units can showcase their technology/products to stakeholders in North East and encourage the use of such technology/products by the concerned agencies/Departments. All stakeholders like contractors, Govt Officials ,Manufacturers,BRO, Technicians etc shall be invited in such events.

8.2.6.1. Eligible Agencies

The following agencies/entities will be eligible to take up the market development programmes in NER under the Scheme :

- i. Textile research associations, Centers of Excellences or any agency appointed by the Ministry of Textiles, Regional OTXC , reputed industry associations, such as FICCI, ICC, CII ITTA, Indian Chapter of International Geosynthetic Society (IGS), Central Board of Irrigation and Power (CBIP), etc, which are assisting industry in organizing awareness campaigns
- ii. Various engineering and textile universities and research organizations

8.2.6.2. Operational Modalities

- i. The eligible entity will be required to submit a programme schedule, likely participating units/stake holders, likely benefits and impact of the programme, and estimated budget to OTXC for Approval.
- ii. The entity shall provide a built up furnished stalls to the participating units / stake holders at free of cost.
- iii. The entity shall invite all the stake holders particularly institutional buyers for participation in the event.
- iv. The Seminars shall also be organized, if required during the event.

- v. The proposal will be considered and approved by OTXC based on the extent of industry and stakeholder participation and product range being covered. OTXC will examine and issue approval letter to the eligible agency/entity
- vi. The Participating units shall be provided 50% of to and fro Air Fare for two Employees of the unit for participating and putting up the stall in the event. The Employees of the unit shall travel in Economy class only and shall travel by Air India only wherever possible. The Organizing agency shall reimburse the travelling cost to the units and shall include that in the total cost of the event while submitting the proposal.
- vii. Geo technical textiles manufacturers / Traders are eligible for participating in the buyer seller meet and they have to be registered with OTXC.
- viii. A complete progress of the activities shall be submitted to AMC for information from time to time.

8.2.6.3. Eligible Fund support and Release of Funds

S. No.	Description	Estimated Costs (in Rs Lakhs)
1	Market Development Support	500

OTXC will directly release the payment to the concerned agencies on reimbursement basis following submission of expenditure statements and supporting documents. The claim along with the declaration duly completed and signed by a Chartered Accountant shall be submitted to OTXC .The upper ceiling limit per event shall be Rs. 30 lakhs.

8.2.7. Sub-component-7: Scheme evaluation

Mid-term and end term evaluations of the scheme shall be carried out by reputed agencies for course correction and overall evaluation of the scheme. A mid-term evaluation of the scheme will be carried out at the end of 2nd year of implementation to evaluate the effectiveness of the scheme and mid-course correction, if any required. Similarly, an end-term evaluation will also be carried out at the end of the scheme period

8.2.7.1. Eligible Agencies

OTXC shall engage suitable agencies to carry out the mid-term and end-term evaluations of the scheme. OTXC will release a EOI /Request for Proposal (RFP) and invite bids through open tender for engaging such agencies for the above purpose at appropriate time. The agencies that will be eligible to bid for these evaluation studies should have

demonstrated experience of evaluating government schemes. The OTXC will frame detailed eligibility criteria and evaluation criteria in the Request For Proposals (RFP).

8.2.7.2. Operational Modalities

Consulting agency will be hired in accordance with the provision of GFR of Government of India. The Apex Monitoring Committee (AMC) will evaluate and select the agency to undertake scheme evaluations. The interim and end-term evaluation reports on the scheme would be considered by AMC and payment would be released by OTXC to the agency on the recommendation of the AMC.

8.2.7.3. Funding and Release of Funds:

Total funds available under this head is as under

S. No.	Description	Estimated Costs (in Rs Lakhs)
1	Independent Evaluation (midterm and end term) of entire scheme	300

Based on the bid of the successful bidders, which will be engaged for carrying out these studies, Payment shall be released to the agency as per the GFR rules and as per the milestones decided at the time of Agreement after awarding the assignment.

8.3. Component-III (Administrative Expenses) (Rs 10 Cr)

An amount of Rs10.00 Cr has been set aside to finance the administrative expenses related to the scheme implementation and monitoring, considering the complexities and difficulties of administering and monitoring a multi-agency based scheme in the NER.

9. Hiring of Project Coordinating Agency (PCA):

A Project Coordinating Agency (PCA) will be engaged for coordinating the implementation of the scheme through various agencies involved. PCA will have its office in a centralized location in the North East to coordinate various activities.

9.1. Roles & Responsibilities for PCA

Following shall be the roles and responsibilities of the PCA:

- i. PCA will be responsible for overall onsite monitoring of the project implementation;
- ii. Coordination among all project stakeholders, including State Governments, Concerned COE, Project Authorities, manufacturing units and suppliers/service providers, etc;

-
- iii. Coordination with Concerned COE and SLCC for identification of pilot project sites;
 - iv. Coordination with Project Authorities for their day-to-day function, monitoring their activities, including capacity building programmes and reporting thereof.
 - v. PCA will be required to work closely with State-level governments, Project Authorities and Concerned COE in training engineers and implementing capacity development programs;
 - vi. Coordination with the suppliers for delivery of geotechnical textiles, Concerned COE for testing of supplied geotechnical textile products, supervision of installation and certification, as well as of ongoing evaluations of pilot project implementation;
 - vii. Coordination with the Concerned COE and OTXC and other relevant agencies for various activities, including all soft intervention programmes and evaluation studies;
 - viii. PCA will report regularly to OTXC/MOT/SLCC and prepare MIS reports and returns to OTXC and MOT from time to time;
 - ix. PCA shall also coordinate for all meetings of SLCC and AMC, which shall include preparing the agenda, minutes of meeting and any other follow-up actions pertaining to the meetings;
 - x. PCA shall prepare reports on its work and submit them to OTXC and MOT on a quarterly basis;
 - xi. Any other work related to the project which may be allocated to the PCA on a periodic basis. The AMC may include any other responsibility in the RFP for the engagement of the PCA.

9.2. Engagement of Project Coordination Agencies:

The OTXC will release a Request for Proposal (RFP) and invite bids from reputed consulting firms and project implementation/coordinating agencies etc. through an open tender following the GFR guidelines. Eligibility criteria for agencies bidding for engagement as PCA shall be as follows:

- i. Reputed consulting agencies/project coordinating agencies having working experience of implementing government schemes.
- ii. Experience of executing project involving multi-stakeholder coordination activities.
- iii. Prior experience in technical textiles consultancy assignments will be an added advantage.

-
- iv. Preference will be given to experience in executing the government projects in NER.

The detailed eligibility criteria, and roles & responsibilities of PCA may be formulated by OTXC/AMC and incorporated in the RFP. The bids shall be evaluated by the AMC for selection of a suitable agency for this purpose.

9.3. Terms of engagement and payment schedule

The terms of engagement and payment schedule of the PCA shall be as follows:

- a) The agency will be engaged for the entire duration of the scheme till completion of end term evaluation and submission of reports on the scheme implementation after the implementation period;
- b) The PCA shall be required to mobilize adequate manpower onsite for implementation of the scheme and submit an implementation/activity plan, including quarterly deliverable milestones to the OTXC immediately after its engagement;
- c) The selected agency shall be required to submit a bank guarantee of 10% of the contract value as performance gurantee, which will remain valid for a period of 5 years or till successful completion of the scheme, whichever is earlier.
- d) PCA shall submit quarterly scheme implementation reports against established milestones. AMC shall review the performance of the PCA and recommend the release of funds. Payment to the PCA shall be released on a quarterly basis for an amount equally divided over the scheme period.
- e) OTXC would directly release the payment to PCA based on the recommendation of the AMC.

10. Roles and Responsibilities of other Agencies involved in the scheme

The scheme is envisaged to be implemented in close co-operation, coordination and partnership with a host of Governmental and Non-Governmental Agencies. The role of each of these agencies has been as outlined in the detailed implementation guidelines as above.

GLOSSARY OF ABBREVIATIONS USED

S. No.	ABBREVIATION	UNABRIDGED
1.	NER	North Eastern Region
2.	COE	Centre of Excellence
3.	BTRA	Bombay Textile Research Association
4.	ATIRA	Ahmedabad Textile Industry Research Association
5.	BIS	Bureau of Indian Standards
6.	IA	Implementing Agency
7.	R & D	Research and Development
8.	GOI	Government of India
9.	PCA	Project Coordination Agency
10.	TRA	Textile Research Association
11.	FICCI	Federation of Indian Chambers of Commerce and Industry
12.	ICC	Indian Chamber of Commerce
13.	CII	Confederation of Indian Industry
14.	ITTA	Indian Technical Textile Association
15.	TMTT	Technology Mission on Technical Textiles
16.	OTXC	Office of the Textile Commissioner
17.	SLCC	State Level Coordination Committee
18.	AMC	Apex Monitoring Committee
19.	GFR	General Financial Rules, Government of India
20.	EC	Empowered Committee
21.	DONER	Ministry of Development of North Eastern Region
22.	AS&FA	Additional Secretary & Financial Adviser
23.	GoI	Government of India
24.	MoT	Ministry of Textiles
25.	PMGSY	Pradhan Mantri Gram Sadak Yojana
26.	BRO	Border Roads Organisation

Contact Details

Director (Technical Textiles)

Ministry of Textiles, Udyog Bhawan, NEW DELHI - 110 107

Telephone: 011-23063310

Email: geetan@nic.in, Website: www.texmin.nic.in

Textile Commissioner

Office of the Textile Commissioner

New CGO Building, 48, New Marine Lines, MUMBAI - 400 020

Telephone: 022-22001050 Fax: 022-22004693

E-mail: ttcell-otxc@nic.in

Website: www.txcindia.gov.in & www.technotex.gov.in

Director

Ahmedabad Textile Industry's Research Association (ATIRA)

Dr. Vikram Sarabhai Road, P.O. Ambawadi Vistar, Ahmedabad-380015

Telephone: 079-26307921 Fax: 079-26301969

E-mail: atira@sancharnet.in, Website: www.atira.in

Director

The Bombay Textile Research Association (BTRA)

Lal Bahadur Shastri Marg, Ghatkopar (W), MUMBAI - 400 086

Telephone: 022-25003651 Fax: 022-25000459

E-mail: btra@vsnl.com, Website: www.btraindia.com