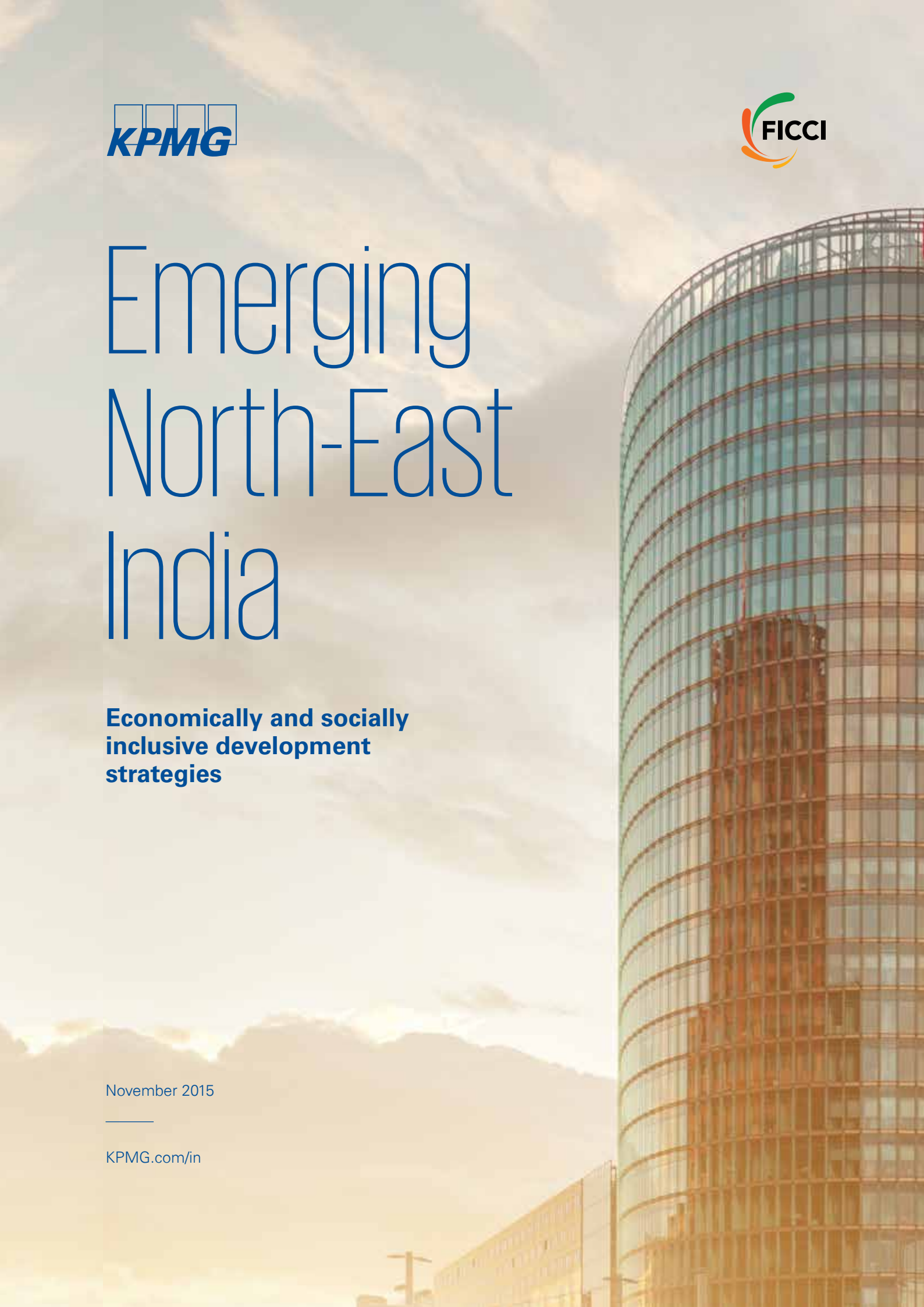


Emerging North-East India

Economically and socially inclusive development strategies

November 2015

KPMG.com/in





Foreword

North-East India, covering 8 per cent of India's land and 3.1 per cent of India's population is the country's Gateway to South East Asia. The integration and development of the region is critical for India's continued progress. With over 5,300 kms of international borders, it is apparent that any development strategy for the region must necessarily include strategies for collaboration; and connectivity must be a central theme of the strategic road map.

First North-East connectivity summit: FICCI had organised the First North-East Connectivity Summit in November 2014 which was attended by senior representatives from the Government of India, State Governments, industry, diplomats, foreign delegates and multilateral agencies like the World Bank and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP).

The summit addressed a number of issues pertaining to the current economic situation in North-East India, trade potential between North-East India and ASEAN countries, development of a North-East industrial corridor, development of roads, railways, airports, inland waterways and power sector development. A number of infrastructure projects were identified such as the North-East Economic corridor, inland water transport, North-East ring road, Trans himalayan highway .

Second North-East connectivity summit: To take stock of the gains since the last summit and to propose a way forward for thorough development of the region, the second North-East Connectivity Summit is being organised in Shillong. Apart from focussing on improving the connectivity in the region, this year the summit will also highlight the opportunities that improved connectivity will bring about and work towards an action plan creating an enabling environment in areas like energy, skill development and environment.

The Prime Ministers recent visit to Bangladesh laid great impetus on improving connectivity with North-East India. The renewal of the IWT protocol, MOU on the use of Chitagong and Mongla ports and starting of bus services at key tourist entry points such as Guwahati are all moves that will give a major boost to connecivity. Similarly, the framework agreement on regional transport signed recently with Bangladesh, Bhutan and Nepal will facilitate easy movement of goods and passengers to and from the North-East region.

North-East Implementation Agency: Many well intended plans and strategies have been made for the region and as a result we see substantial progress in many areas ofthe region. If the full measure of success was not achieved, it is because implementing agencies were not in sync with the plans. It is therefore of pertinent importance that we develop a plan to strengthen the implementation capacity.

I feel this can best be achieved by setting up a North-East Regional Project Implementing Authority, which will not only handle funding of the projects but also put together a team for hands-on monitoring of each project, coordinating with state governments and all other relevant agencies, which will implement and monitor each vertical with select private sector partners.

The report highlights the potential sectors for development, infrastructure and connectivity needs and proposes a number of initiatives that need to be taken up in sectors such as tourism, energy, education and environment besides connectivity infrastructure. I would like to thank KPMG in India for partnering with us and publishing this report.

While preparing the report, we have received substantial help from a number of organisations. In particular, we would like to acknowledge the support we received from Tata Consultancy Services who helped in reviewing the initial draft.

I am sure the North-East is going to become a leading contributor to India's national growth.

The only question is how soon can we make it happen.



Ranjit Barthakur
Chairman
FICCI North-East Advisory Council

North-East, the land of seven sisters, is a serene and ageless picture of lush hills, with a prevailing culture unmarked by modernisation. Unfortunately, its picturesque beauty is often clouded by instances of political unrest that keep making news every other day. Despite regular disruptions, the region has immense potential that, if utilised in the right manner, can put North-East India on the national as well as the global map.

This report, **Emerging North-East India - economically and socially inclusive development strategies,** prepared jointly by KPMG in India and FICCI, aims to highlight the prospects which can be explored. The north-eastern region has the capability to develop as a self-sustaining economic unit of the country, while also contributing towards building a new and improved India, in line with the present government's aspirations.

The publication provides an in-depth analysis of the current state of affairs and the potential of two areas where the region's comparative advantage is visible tourism and energy. It presents ideas that can act as an impetus for policymakers and government officials to push for further development in the region. We have also identified areas of improvement and provided recommendations that could help bridge the gap. The report highlights growth enablers, such as infrastructure, education and skill development, environment and policy initiatives, which need to be worked on in the interest of progress. Further, the efforts that have set the ball rolling in the past year the smart city initiatives, the Look East policy and the BBIN initiatives have also been discussed.

We, at KPMG, are extremely pleased to work with FICCI on this knowledge paper, which we plan to release at the second North-East Connectivity Summit being held in Shillong. Focussing on the opportunities and required enablers in the North-East, the report has been developed based on the initial study by FICCI and the secondary research by KPMG in India. The aim is to provide a thorough analysis that can be used by investors and policymakers to develop action plans, which can help trigger growth in the region.



Ambarish Dasgupta
Partner and Head
Management Consulting,
KPMG in India



Message

North-east India has great potential for development and could well become the growth engine that will give the next big push to the Indian economy. We believe that the North-East could be transformed into an economic corridor connecting India, Myanmar, Bangladesh and the ASEAN countries. The benefits of such a transformation would be multifaceted, impacting not only India but the entire sub region, paving the way for integration of India's North-East with the economic mainstream.

The first North-East Connectivity Summit, held in November 2014 had highlighted the connectivity and infrastructure requirements to achieve the transformation. During the last one year, we have seen a lot of forward movement towards removing connectivity and developmental bottlenecks. Major investments in infrastructure have been announced, projects such as the Trilateral Highway are nearing completion and connectivity within the region has seen significant improvements. However, implementation still remains a key challenge. Clearly, we need more action on the ground and a coordinated effort by the government and the private sector is perhaps the need of the hour. Above all, we need to identify an implementation model that works for the region.

This report makes an attempt to highlight the opportunities that the region represents while presenting some ideas for enabling inclusive growth.

I hope the report serve its purpose as a catalyst for thought.



Dr. A Didar Singh
Secretary General
FICCI

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Executive summary



Introduction

The North-East region has great potential to develop not just as a self-sustaining economic unit of India but also contribute to the success story of the country, which is reflected by the Prime Minister's focus on this region.

The stretch boasts of fertile land and water resources, an ideal habitat for horticulture, and a rich cultural and natural heritage that could be explored further for development.

The emphasis on the comparative advantages which lie in horticulture, handlooms and handicrafts, rural industries should not distract one from the need to boost manufacturing and create urban jobs. In fact, 'Make in the North-East' - The North-East's trade with South-East Asia needs further development. Raw materials form a major part of its trade with Myanmar and Bangladesh. Meghalaya, for example, exports stone boulders, limestone and horticulture products to Bangladesh. These are processed and re-imported to India as stone chips and cement. There still exists scope for value addition and cross-border collaboration. There is potential for horticulture to progress as the region produces quality turmeric and ginger, exotic fruits like kiwi and passion fruit, that grow easily. But this segment is languishing because marketing arrangements are inadequate. The absence of efficient cold storage chains exposes cultivators to market fluctuations. Tourism, too, has not made much headway due to poor infrastructure development. There are uncoordinated and fragmented efforts by individual states. The long tourism journey can start with simple, doable steps such as: creating a North-East platform for coordinated action, developing destinations, creating tourism zones, involving local people and the private sector.

Each ministry of the Union Government is required to spend at least 10 per cent of its budget in the North-East. The central sector fund for the year 2014-15 was INR4,84,532 crore.[1] Therefore, about INR48,000 crore is available to the region, in addition to each of the north-eastern states' own planned allocations. But so far, the pool of unspent funds has been accumulating primarily because of the lack of capacity to formulate fundable proposals.

Therefore any development strategy for the North-East should start with an incisive inquiry into why the region could not spend the earmarked money and use expertise from various institutions to prepare an array of doable projects.

To harness the full potential of these sectors, significant investments will be required in upgrading the regions infrastructure, education and skill development. All this has to be done, keeping in mind the need for preserving the rich biodiversity of the region. In the end, development comes down to implementation. The newly introduced initiatives of the ministry for development of the north-eastern region could energise the process. Much depends, on the proactive role of the states.

1. Indian Express Article Access date, http://indianexpress.com/article/opinion/columns/make-in-the-northeast/ accessed November 2015

SWOT analysis of north-eastern states[2]

Strengths

- Several tourism attractions such as Blue mountain (Phawngpui - Mizoram), Palak Lake (Mizoram), Kangla Fort (Manipur), Majuli (river island in Assam)
- Presence of an ethnic tribal culture each with unique customs and traditions.[3]
- Numerous tea estates
- The north-eastern region has a very well performing gender development index[4]
- Rich bamboo reserves
- Handloom and weaving is a skill acquired by the local community
- Abundance of natural resources like limestone as well as water for hydropower potential[3]
- Ideal climate conditions
- Safe and clean, pollution free environment.

Weakness

- Lack of proper connectivity. A large part of the region comprises of a hilly terrain which makes the states dependent on the road network which is not particularly good. Also lesser number airports reduce connectivity[3]
- Limited tourism infrastructure facilities. Fewer accommodation facilities which are insufficient to cope up with the demand and are of poor quality
- Scarcity of skilled and unskilled labour
- Floods and landslides in monsoons make places inaccessible
- Laws in the state like land acquisition and transfer need to align with a vision for Public Private Partnership (PPP) and make the environment conducive for investments[3]
- Projects delayed in implementation causing development lags
- Landlocked states.

Opportunities

- Development of the handicraft industry
- Flood management system to improve accessibility to certain parts of the states during monsoons, which can be developed as tourist spots3
- Linkages to existing tourism circuits and further circuit development
- Fostering coordination with other states on developing tourism3
- Trade can drastically be improved by improving infrastructural facilities and accessibility.

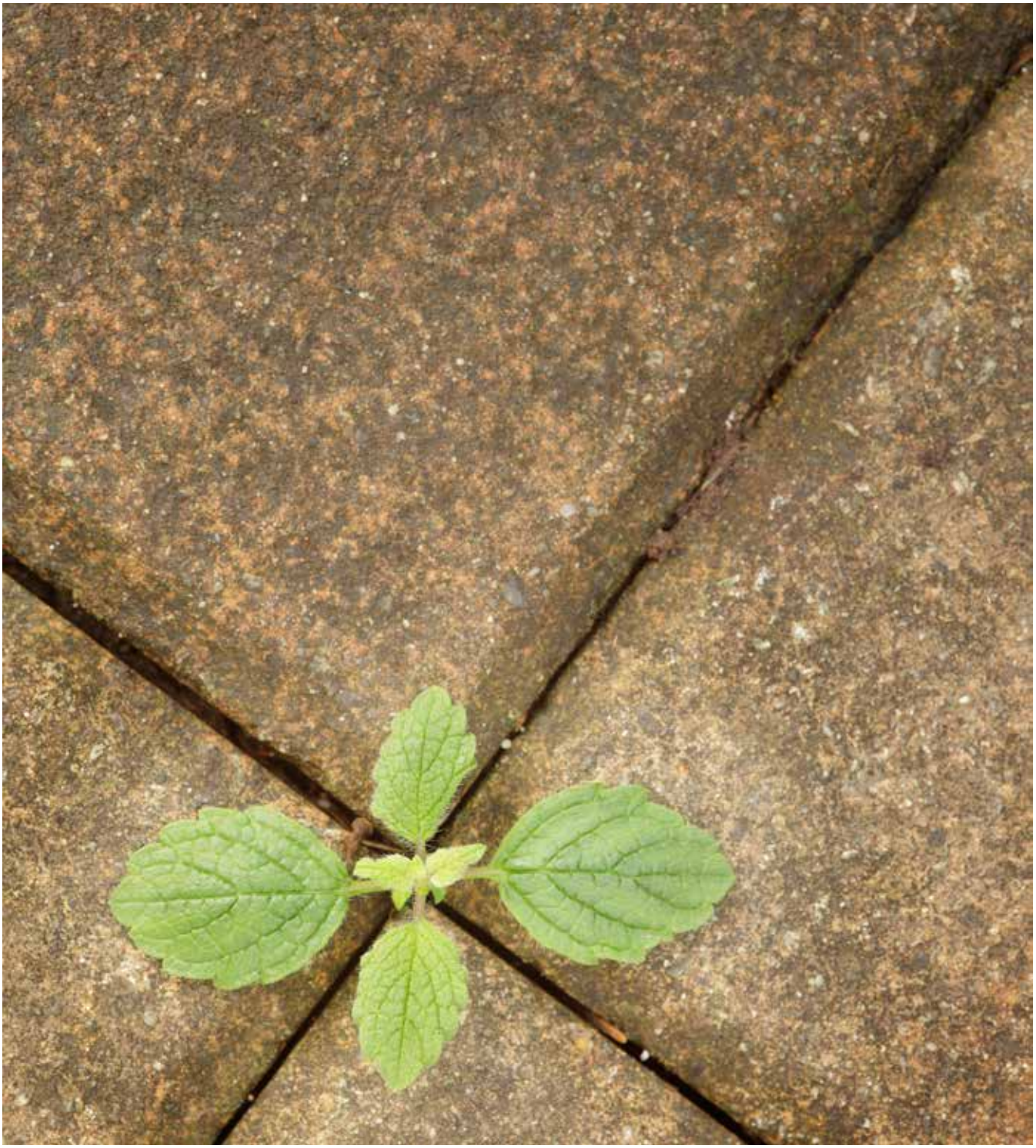
Threats

- Overuse and commercialisation of eco-sensitive zones could lead to depletion of resources and weakening of attraction3
- Regional connectivity concerns
- Land banks and land availability if not addressed will limit private sector investments3
- Migration of local people to urban areas for employment prospects.

2. KPMG in India and FICCI analysis 2015
3. http://mdoner.gov.in/content/report-studies-ner accessed on September 2015
4. http://www.researchgate.net/publication/228226356_Human_Development_in_North_East_India_-_A_Critical_Appraisal

Developments during the last one year

A number of initiatives have been taken in the last year and progress has been made. For example, the government has announced plans of investing INR92,000 crore for development of roads and railways. Under the "Special Accelerated Road Development Programme in North-East (SARDP-NE), the Trans-Arunachal highway is being developed. Under the BBIN initiative, a subregional Motor Vehicle Agreement that allows buses and later private vehicles with a Bhutan, Bangladesh, India and Nepal (BBIN) permit to travel unobstructed through borders between Bangladesh, Bhutan, India and Nepal. Similarly, bus services with Bangladesh have improved.



Road map for development

Tourism



Short-term steps

- Create a North-East tourism development authority to develop circuits, associated infrastructure, and market North-East tourism
- Establish an ecotourism certification authority and identify eco-sensitive areas
- Creating a portal for promoting homestays
- Promote specific cultural circuits for international tourists
- A thorough North-East tourism guide book and web portal
- Implement North-East ecotourism guidelines, certification, and identify 'eco-sensitive' areas
- Focus on capacity building, and skill development in the tourism space based on anticipated demand.

Long-term steps

- Evaluate and rope in leading hotel chains to set-up hotels (2-5 star) in various regions in the North-East
- Create convention facilities across major North-East cities to attract international exhibitions
- Create linkages between circuits in different states
- Focus on wayside amenities, emergency responses, medical facilities, mobile and internet connectivity in several circuits.

Energy



Short-term steps

- 25 per cent of power procurement from Bhutan should be allotted to North-East[5]
- Include Sikkim in the North-East power grid
- Strengthen the link between the eastern and north-eastern grid
- Adequate transmission capacity connecting North-East India with Bhutan should be put in place
- Focus on regional small scale hydro policy.

Long-term steps

- Set-up Shale Oil and Gas Authority dedicated to the North-East
- Facilitate land acquisition for growth of small hydro projects
- Strengthen intraregional Transmission And Distribution (T&D) capacity and add more 400KV transmission lines
- Take up PPP projects for off grid solar energy to electrify villages
- Set-up projects like using solar eco train to connect environmentally sensitive areas like Kaziranga.

Small scale Industries



Short-term steps

- Encourage formation of cooperatives and Self Help Groups (SHG's) for commercial purposes of handlooms and handicrafts.
- Training of handicraft artisans through existing vocational institutions/industrial training institutes/ polytechnics, etc. to bring about fruitful employment.
- Training of artisans/SHG leaders/NGOs in capacity building.

Long-term steps

- Implementation of centrally sponsored schemes for the development of sericulture and the silk industry.
- Catalytic Development Programme (CDP) five year plan should provide a thrust, inter alia, to the development of sericulture.
- Design and technical upgradation in the handlooms and handicrafts sector.

5. Ficci Report 2014 First North-East Summit

Infrastructure



Short-term steps

- Create a project development authority on lines of the Delhi-Mumbai Economic Corridor for the North-East economic corridor
- Identify core economic activities for each node and design a master plan for the same
- Survey the North-East Ring Road, declare the project as a national project and allocate funds
- Set-up a River Development Authority to implement a broad Inland Water Transport (IWT) project
- Negotiate with Myanmar, Bhutan and Nepal for road connectivity
- Dredging and channel stabilisation work of rivers Brahmaputra and Barak.

Long-term steps

- **Roads:** Complete the proposed roads connecting Tawang and Tashigang, develop NH 53 (Imphal-Jiribam), Aizwal Champai as four lane expressways, Stilwell road from Ledo to Myitkyina, Tura-Jamalpur road and Sabroom-Chittagong road
- **IWT:** Develop 20 ports in Brahmaputra and Barak with a township, industrial area rail and road connectivity
- **Airports:** In the first phase operationalise six airports; Rupsi, Shella, Kamalpur, kailashar, Khowai and Tezu; six additional airports in phase II

Education



Short-term steps

- Revisit norms for granting permissions for setting up medical colleges and engineering colleges
- Identify regions in North-East for setting up skilling centres, technical institutions, medical institutions through the hub-spoke model
- Each ITI in the region should identify core courses of focus.

Long-term steps

- Develop eight knowledge hubs across the region
- Set-up one engineering college in each district through PPP/government funding and look at setting up a North-East Technical University
- Set-up 29 medical colleges through government funding/PPP mode
- Set-up a North-East Skill University with funding from the central government
- Set-up seven centres of excellence to focus on important skill areas as hubs and develop smaller outreach centres to be linked to those hubs.

Environment



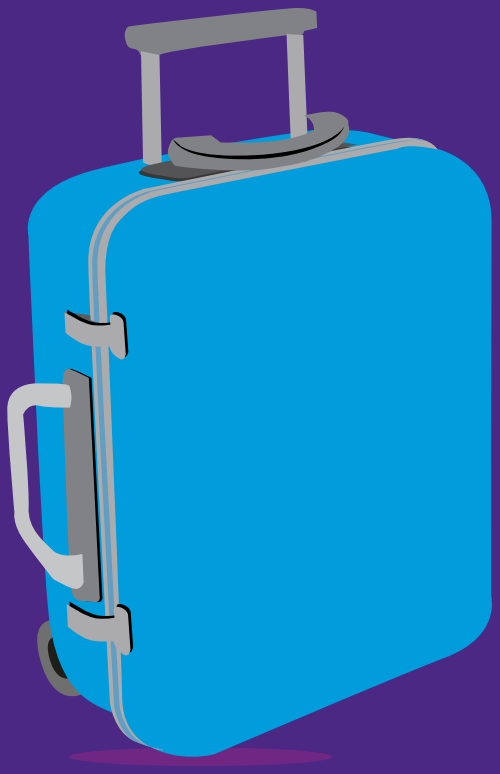
Short-term steps

- Draft a uniform environment policy across the North-East
- Set-up joint management groups for creating a forest resource management plan and implementing the schemes
- Social forestry initiatives near water bodies
- Sustainable water usage plan focussing on inland water transport, fisheries and hydro power.

Long-term steps

- Reassess the forest classification system on carbon trading involving North-East states
- For conserving eco hotspots, create dedicated animal corridors, by creating overhead bridges/shifting roads.

Tourism



Overview

Virtually unexplored, the North-East offers distinct opportunities in almost all major areas of tourism such as adventure, eco-tourism, wildlife, wellness tourism, tea tourism, pilgrimage and cultural tourism.

With more than 220 ethnic groups with equal number of dialects,[1] the region is one of the most culturally diverse in the world. Apart from this, the region also has a large number of historical and religious sites of great significance. Its close proximity to the South-East Asian Tourism Hub is another added advantage.

However, the region has so far been constrained from achieving its full potential due to lack of proper infrastructure (a big bottleneck being the lack of adequate accommodation in the potential tourist destinations), inadequate marketing, poor brand perception and brand recall, travel permit procedures, scarcity of skilled manpower and absence of a broad tourism policy for the region as a whole.

A number of opportunities exist to develop the tourism potential of the North-East providing incentives to the private sector to get involved in a major way, creation of regional and international circuits and shaping skilled manpower for the industry.

1. Walk through india, http://www.walkthroughindia.com/location/north-east-india-an-unexplored-slice-of-paradise/

Current status of tourist arrivals

North-east accounts for less than 1 per cent of India's total tourist arrivals.[2] A huge chunk of tourism in the region comprises of domestic tourists. These arrivals have seen a steady rise during the last few years. While foreign tourist arrivals have also grown, the numbers are still very small, with less than a lakh of foreign tourists visiting the region in 2013.[3]

In 2013, Sikkim attracted the most number of foreign tourists (31,689) while Assam attracted the most number of domestic tourists (4,339,485).[2] Arunachal Pradesh, a state with immense tourism potential attracted only about 10,000 foreigners and about 100,000 domestic tourists while states like Nagaland and Mizoram attracted less than one lakh tourists (foreign and domestic combined).[3] The primary attractions for tourists in the North-East are nature/wildlife, culture and religion.

Status of tourism infrastructure

Tourism infrastructure includes accessibility, accommodation, restaurants, tourist information centres, tour and travel services, tourist guides, shopping facilities, banking and money exchange, tourist safety, tourism police, other facilities and services.

There are major gaps in the tourism infrastructure in the region. Accessibility and smooth travel is an area where huge investments are required. Barring a few destinations/ cities, accommodation facilities are also a big challenge in terms of availability and quality. Wayside amenity centres are non-existent in several circuits.[4] Quality of tour and travel services also varies between the states while in states like Sikkim, they are very active and handle tourist services efficiently, in some other states, there is a lack of organised tour operators. Tourism experiential facilities are generally non-existent. Our analysis of the existing tourism infrastructure in each state is given below.

Destination development

Planned destination development initiatives have not been taken up in any of the tourist destinations. In several of them, development has taken place in a haphazard manner with little focus on preserving and developing the core attractions of the destination. It seems necessary to take up planned destination development projects encompassing tourist amenities, recreation facilities, healthcare, etc.

Hotels and restaurants

Several tourist destinations in the region suffer from an inadequacy of accommodation facilities. Assam, one of the most diverse states in the region offers a large number of rooms across various categories of hotels and resorts. The largest concentration of hotels and resorts in Assam are in Guwahati and Kaziranga followed by Dibrugarh, Jorhat, Tinsukia, and Silchar[3]. Apart from this, a number of tourist lodges have come up in different locations across the state. It has only one five star hotel in Guwahati while four more are coming up . Apart from a few facilities in Guwahati and Kaziranga other accommodation facilities need to be upgraded in terms of infrastructure, service quality, eco friendliness, etc.

Tourist information centres

Many states have tourist information centres located in the important metros (particularly, Kolkata and Delhi). However there are only limited number of information centres within the states, Assam being the only state which has a good number of tourist information centres[3], located within the state. None of the tourist information centres run by the state governments are equipped to provide thorough information about the North-East region as a whole.[5]

Wayside amenities

There are hardly any wayside amenities while travelling to tourist destinations. This is an area which majorly needs improvement, particularly in view of the long travelling time within the state and sparse population in many of the tourist circuits.

Destination amenities

Destination amenities like souvenir shops, restaurants, recreation facilities, etc. are lacking across the region. Other facilities like banking and money exchange facilities also need to be put in place.



2. Compiled by Datanet India from: Ministry of Tourism, Govt. of India.
3. Analysis conducted by FICCI, 2015
4. http://mdoner.gov.in/, Tourism Development approach and strategy
5. North-East Tourism Master Plan, commissioned by north-eastern Council and prepared by TCS

Proposed ideas

A number of tourism development projects funded by various central ministries and state governments are in various stages of implementation or are being planned. Apart from the Ministry of Tourism, the north-eastern Council is also funding a number of tourism projects in the region. Over and above the existing projects, certain steps need to be taken to enhance the sector further, which are listed below.

Tourism strategy for the region

The tourism development strategy for the region should revolve around key themes of nature, culture, and leisure. Broadly the strategy could consist of the following.

- Focussed marketing strategy.
- Develop easily identifiable and attractive circuits around the key themes of
  - Nature, wildlife and adventure
  - Culture, religion and history
  - Leisure and sports
  - Wellness tourism.
- Connect with key tourism hubs in India and neighbouring countries.
- Develop infrastructure
  - Hospitality
  - Connectivity.
- Identify and address ecological concerns.
- A North-East Tourism Development Authority should be created under the North-East Council, for implementation of a region wide tourism master plan including development of intrastate circuits.

Marketing strategy

Since tourism in the North-East can be classified as either for eco-leisure, wellness, adventure, religious, or business, a specific marketing strategy needs to be devised for each of the segments. Similarly, focus should also be given to attract international tourists.

Some of the key strategies that can be adopted are:

- Meetings Incentives, Conferencing, Exhibitions (MICE) tourism: If one looks east beyond Kolkata to hold corporate off-sites, business and sales meetings, very few places emerge that can accommodate large number of people (over 300) in a business-leisure environment. Typically, it is concentrated in Guwahati, Siliguri and Darjeeling. North-eastern cities like Gangtok, Guwahati, Shillong, Dimapur and Agartala should be developed as MICE sites providing opportunities for business seminars, conventions, and meetings. Infrastructure facilities like hotels with meeting and video conference facilities, high speed broadband and convention centres needs to be developed in a big way. Along with this, leisure facilities need to be upgraded in these locations.
- Weaving the legends: Connect various historical sites throughout the region to document the history and legends associated with them. These legends and stories can be woven together to attract tourists to these destinations and also add to the experience in the form of dramatic/artistic depictions.[6]
- Target international tourists by promoting specific cultural circuits based on Buddhism and the tribal culture in states like Sikkim, Nagaland, Mizoram, Arunachal Pradesh and Manipur.
- Target the younger population (both domestic and international) by promoting events like music competitions, talent hunts, and adventure sports.
- Offer special discounts for off season and special interest packages for tourists belonging to the Visiting Friends and Relatives (VFR) category and intra North-East travellers.

Promotion strategy: A number of promotion strategies exist like roadshows, advertising through TVs, sales promotions, public relation, social media and personal selling. Each of them has its own distinct benefits and so an effective promotion mix to achieve great benefits within the given budget constraints has to be devised·

Advertising: The various media vehicles available for promotion of the region are as follows:

- The Tourism Departments or North-East Council should conduct roadshows in other states and metro cities. This also includes participation in international trade and tourism fairs.
- Advertisements in dailies, weeklies, and fortnightly publications in leading national newspapers and magazines.[7]

6. http://mdoner.gov.in/content/report-studies-ner accessed September 2015
7. http://mdoner.gov.in/accessed September 2015

- Outdoor advertising at airports, important road junctions in the targetted states and countries.
- Television and radio advertising showing video clips of the region.
- Tie up with international travel sites and magazines.
- Develop a broad North-East tourism guidebook, leaflets and brochures, inflight brochures and tourism maps.[8]

It is recommended that the services of a professional service provider be engaged to devise an effective promotion strategy for the region.

Social and digital media: In todays interconnected world a fast way of reaching potential tourists is effective campaigning through digital media. The tourism sites/portals of the states must be redesigned to provide necessary information to tourists at their fingertips. The Tourism Departments must use social media avenues to advertise and promote tourism and also position their products based on the feedback received via this medium.

Wellness tourism

Wellness tourism is 'travel associated with the pursuit of maintaining or enhancing one's personal wellbeing.'[9]

The north-eastern states of India have the potential to increase wellness travel. They possess scenic locations which can be a home to a vast number of spas, health resorts, yoga retreats, and fitness centres, etc.

The local population of the north-eastern states are known to be skilled in avenues that are centrally placed under wellness tourism but migrate to look for employment as adequate opportunities are not present in their home states. If this sector is developed, migration of skilled resources can reduce and local employment can increase.

Development of tourism circuits

Developing and promoting well-structured circuits is central to any successful tourism promotion strategy. Apart from the fact that circuits are more attractive as compared to individual destinations, circuits can also help increase tourism revenue while adding to the tourist experience. They also help in prioritising development and focus their efforts where it is required the most, thereby developing less developed destinations. In the context of North-East India, circuits should be developed around the following themes.

- Nature and adventure
- Culture and religious
- International circuits with Bhutan, Nepal, Bangladesh, Myanmar and Thailand.

Planning circuits' logistics and ease of movement are important considerations, which need to be addressed properly to help enhance the viability of the circuits. The entry and exit points of circuits tdetermines their viability to a great extent. The following possible circuits are proposed based on current demand and potential for development.

Proposed tourism circuit		
Strategy		Strategy
Guwahati	• Guwahati-Shillong-Kaziranga-Majuli-Jorhat • Guwahati-Shillong-Kaziranga-Majuli-Tezpur-Bhalukpong-Bomdilla-Tawang • Guwahati-Shillong-Nongstoin-Balpakram-Tura-Guwahati • Guwahati-Manas-Tura-Balpakram-Nongstoin-Shillong-Guwahati	The centre is expected to have multimedia exhibition facilities,a amenity centre, ethnic food joints, recreation centre, shopping plazas for handicrafts, handlooms, jewellery, artefacts, etc.
North Lakhimpur/ Itanagar	• North Lakhimpur/Itanagar-Ziro-Daporijo-Along-Dibrugarh • North Lakhimpur/Itanagar-Ziro-Daporijo-Along-Passighat-Roing- Tezu-Dibrugarh • North Lakhimpur/Itanagar-Ziro-Daporijo-Along-Mechuka-Dibrugarh	North Lakhimpur may require a three star category hotel. Beautification of Itanagar city, development of the road leading to lake Ganga, development of rural tourism in surrounding Nyishi villages.
Dimapur	• Dimapur-Kohima-Wokha-Mokokchung-Mon-Sibsagar • Dimapur-Kohima-Senapati-Imphal-Moreh	Tourist amenities are required, including development of facilities around the Kachari ruins, a convention centre in Dimapur and a 3-4 star hotel.
Silchar	• Silchar-Imphal-Aizawl-Silchar • Silchar-Haflong-Shillong-Guwahati • Silchar-Haflong-Aizawl-Saiha-Blue Mountain-Palak lake	River front development is required including; walkways, arcades, lighting, jetty, and a floating restaurant, boating and water sports, houseboats.

8. http://mdoner.gov.in/accessed September 2015
9. http://spamantra.in/gsws-2013-india-a-defining-moment-for-global-spa-and-wellness/accessed October 2015

Proposed tourism circuit		
Strategy		**Strategy**
Agartala	• Agartala-Silchar-Shillong-Guwahati • Agartala-Udaipur-Dumbur Lake-Unakoti-Silchar • Agartala-Dumbur Lake-Jampui Hills-Aizawl-Silchar • Agartala-Jampui Hills- Aizawl-Imphal (Silchar)	Development of a tribal heritage village at Khumlung, a tourist facility centre at Kamalasagar with tourist amenities and an interpretation centre, convert part of Ujjayanta Palace at Agartala into a heritage hotel.
Bagdogra/ Gangtok	• Bagdogra-Kalimpong-Gangtok-East Sikkim-Darjeeling-Bagdogra • Bagdogra-Kalimpong-Gangtok-West Sikkim-Darjeeling-Bagdogra • Bagdogra-Kalimpong-Gangtok-North Sikkim-Darjeeling-Bagdogra	

Actions needed[10]

Proposed ideas	Actions recommended
Strategy	
North-East tourism development authority	• Create a North-East tourism development authority with a mandate for development of tourism circuits, associated infrastructure, and marketing of the region. • The authority should have representatives from each state, North Eastern Council (NEC) and Ministry of Tourism.
Ecotourism	• Institute North-East ecotourism guidelines and certification. • Notify eco sensitive areas as 'ecotourism only' zones. • Set-up a model ecotourism project in each state.
Cultural tourism	• Thorough documentation of the history and the folklore. • Create cultural themes and stories which can attract tourists. • Actively promote local culture and develop cultural exhibitions.
Marketing North-East tourism	• Position Guwahati, Shillong, Gangtok, Dimapur and Agartala as MICE destinations and create necessary infrastructure. • Document and highlight the history and heritage associated with various places in North-East. • Promote specific cultural circuits for international tourists. • Focussed advertising campaigns through print, electronic media, inflight brochures, etc. • Broad North-East Tourism Guide book. • Develop a North-East Tourism web portal.

10. KPMG in India and FICCI porposed 2015



Proposed ideas	Actions recommended
Circuit development	
Development of hotels and resorts	• Develop 2-3 star category hotels in Majuli, Nongstoin, Tura, Mokokchung, Mangan, Lachung (Sikkim). • Develop 3-4 star category hotel in Bomdila, Sibsagar, North Lakhimpur, Itanagar, Dibrugarh, Dimapur, Kohima, Moreh, Silchar. • Heritage hotel in Imphal, Agartala. • Development of eco-resorts at Balpakram, Zero, Daporijo, Passighat, Mayudia, Mehao Wild Life Sanctuary, Mechuka, Khonoma, Doyang, Mopungchuket village, Longwa Village, Shiyong, Loktak, Lamden, Silchar, Haflong, Jatinga, Blue Mountain (Phawngpui), Palak Lake, Rudrasagar, Narkelkunju island (Dumbur Lake), Tsomgo Lake, Kecheopari Lake, Yumthang.
Convention facilities	• Convention facility with a seating capacity for 3000 people in Guwahati. • Convention centre in Dimapur with a seating capacity for at least 1000 people. • Small trade centre with convention and exhibition facilities in Moreh. • Convention centre in Agartala with a multiconference facility and an open air theatre, exhibition facilities.
Overall circuit development	• Provision of wayside amenities on all major roads (travel time between two wayside amenities should not be more than two hours). • Development of recreation and refreshment facilities in all major tourist nodes and destinations. • Site development and beautification of historical monuments and natural attractions like caves, etc.

Suggested timelines[11]

Proposed initiative	Suggested timeline
North-East tourism marketing initiative	Ongoing
Setting up North-East tourism development authority	2016
Notification of ecotourism only zones	2016
North-East ecotourism guidelines and certification	2017
Model ecotourism project in each state	2017
Thorough documentation of history and folklore	2018
Develop 2-3 star category hotels in Majuli, Nongstoin, Tura, Mokokchung, Mangan, Lachung (Sikkim)	2018
Develop 3-4 star category hotel in Bomdila, Sibsagar, North Lakhimpur, Itanagar, Dibrugarh, Dimapur, Kohima, Moreh, Silchar	2020
Heritage hotel in Imphal, Agartala	2020
Develop 24 eco resorts	2020
Convention facilities in Guwahati, Dimapur, Moreh, Agartala	2020

11. KPMG in India and FICCI porposed 2015

Energy



Overview

Status of power generation

It has been found that the per capita power consumption (around 249kWh) in the North-East is low as compared to the national average of 778kWh[1]. In spite of this and the fact that the North-East has an installed capacity of about 2905MW[2] the region still suffers from power shortages. The main factors contributing to this are

a. low plant load factor

b. weak connectivity with the eastern grid and a limited carrying capacity

c. distribution capacity.

Long-term forecast of electrical energy requirements in the North-East (MW)

	2021 - 22	2031- 32
Arunachal Pradesh	177	365
Assam	2,534	5,033
Manipur	497	1212
Meghalaya	596	1112
Mizoram	352	723
Nagaland	271	554
Sikkim	176	341
Tripura	472	913
North-East	**5,075**	**10,253**

Source: Central Electric Authority (CEA) 2014

1. http://timesofindia.indiatimes.com/city/guwahati/Power-rich-North-East-consumes-far-less-electricity-than-rest-of-the-country/articleshow/13310078.cms accessed September 2015
2. http://www.swaniti.com/wp-content/uploads/2015/03/Swaniti-Initiative_Report-on-NER.pdf, Multi Sectorial analysis of growth opportunities for north east region

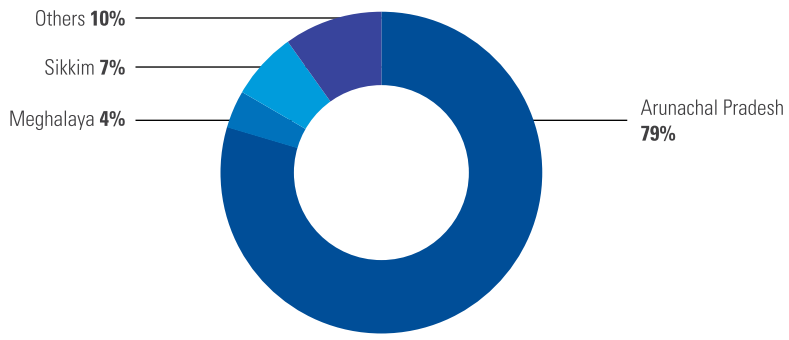
Available potential in the region:

Having various perennial rivers and water bodies, the region has great power generation opportunities, especially for hydropower in the states of Arunachal Pradesh, Sikkim and Meghalaya.[3] The total hydropower potential of the region is estimated at over 58971MW.[4] The spill-over benefits for the region can be channelised for the development of infrastructure such as roads and railways, communications and electricity supply to remote hilly areas, resulting in better quality of life.[5]

A number of incentives are also available for power development in the region. For example, under the Mega Power Policy of the central government, the qualifying threshold capacity of 350 MW for setting up hydropower plants in the region and for availing the special benefits thereof is lucrative compared to the capacity for the rest of the country, which is 500MW.[6] The Government is encouraging investment in power for the private sector .More than 16,000 MW of electricity has been allotted to private players for development.[6]

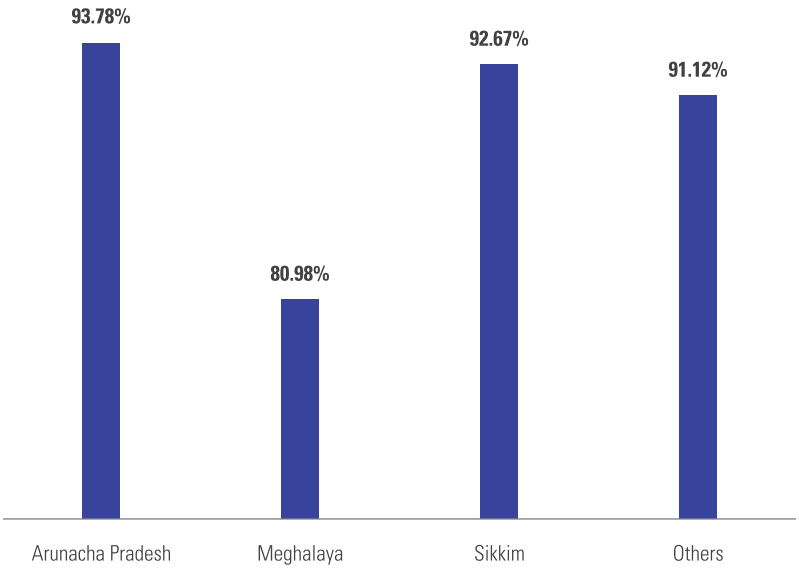
North-East India has a substantial potential for renewable energy from solar power units (particularly in Assam), wind energy (in Meghalaya, Nagaland, Mizoram, Arunachal Pradesh) biogas and small and micro hydropower projects.

Total identified potential (Hydropower)



Source: CEA 2014

Capacity yet to be developed (Hydropower)



Source: CEA 2014



3. www.mdoner.gov.in
4. http://mdoner.gov.in/node/1306
5. FICCI Report 2014 First North East Summit
6. http://planningcommission.gov.in, Development of Power Sector in north-eastern region as accessed September 2015

Power: Key challenges and way forward

Resettlement and rehabilitation issues

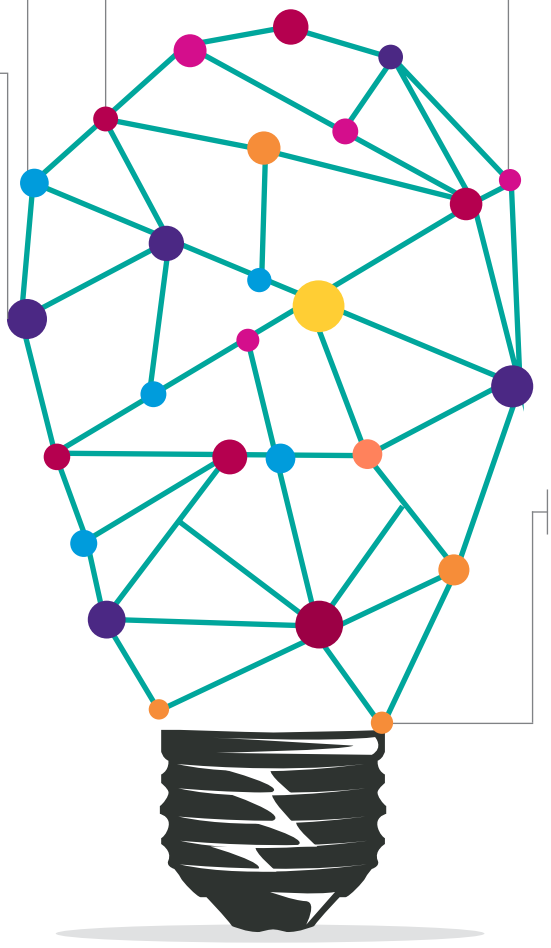
- The land acquisition situation is difficult due to inaccurate or incomplete date of land ownership.
- Sustainable resettlement options should be conceptualised by central and state governments.

Environmental concerns

- Because of unlike biodiversity in the north-eastern region, getting clearance from the Ministry of Environment and Forests (MoEF) has become a challenge in the recent past.
- The state government and the Ministry of Power should check and justice for genuine cases so that they get faster clearances from the MoEF.

Riparian issues

- Most of the river systems of North-East India are transnational. For example: the Brahmaputra River originates in Tibet, flows into India and ends in Bay of Bengal after traversing Bangladesh.
- Full potential of the river stream cannot be utilised due to inadequate agreements, and disputes regarding water sharing.
- The central government, in consultation with the state governments could put in place a mechanism to resolve outstanding border and share allocation issues.
- International water sharing issues also need to be resolved through dialogue with the neighbouring countries to ensure a mutually beneficial arrangements.



Transmission and distribution

- Due to dispersed demand in the region, the per-unit cost of transmission in the north-eastern region is higher compared to other parts of the country. For example, the associated transmission system for evacuation of Kameng (600MW) power was estimated INR1,100 crore which is about 50 per cent of the cost of the generation project.
- Further, difficult terrain, hostile weather coupled with lack of qualified manpower makes the situation worse and results to inadequate development of Transmission and Distribution (T&D) system facilities in the north-eastern states, adversely affecting the reliability of power supply to the consumers.
- To overcome this issue, the Union Government can provide a centrally sponsored scheme support interstate and intrastate transmission and distribution projects.
- Incentives can be introduced by the state government to develop T&D system.

Physical infrastructure

- Power projects generally require massive infrastructure backing, especially roads to transport heavy equipment and helicopters to transport smaller equipment.
- Power sector requirements needs further prioritisation for roads and highway development in this region, and deployment of helicopters.

Proposed ideas

An estimated 50,000MW of hydropower potential remains untapped due to environmental concerns and various other reasons apart from substantial possibilities for gas-based and coal-based thermal generation.[7] The thermal power project at Bongaigaon is at an advanced stage of implementation, but is delayed due to various reasons. The commercial operation of this project along with the Palatana Project would make an additional 1,475MW of power available to the region, which might not only fulfil the immediate problem at hand but could actually create a power surplus in the region. which might not only fulfil the immediate problem at hand but could actually create a power surplus in the region.[8] Further other existing projects are also being pursued to improve the scenario as highlighted in the table below.

Projects	Actions recommended
Bongaigaon thermal power plant	• Address security related issues and help ensure speedy completion of the project. • Develop IWT-based coal transportation systems for cost effective transportation of coal. • Long-term coal linkage from Bihar and Jharkhand.
Tripura thermal power project	• Speedily commission third unit of the project. • ONGC should ensure quality of gas supplied to the project.
Lower subansiri hydro electric power project	• Address the safety concerns and make the necessary changes in the design parameters as suggested by the expert panel. • Measures for downstream impact mitigation.
Debang multipurpose project	• Address safety and environment concerns before construction begins. • Make design changes if necessary.
Other hydro projects	• Objective environment and economic cost-benefit analysis for each project. • Address environmental and safety concerns at the design stage. • Get local and downstream population onboard during the planning phase.
Ultra mega transmission project	• The state government should resolve security issues in the Bongaigaon-Purnia Section. • Power grid to help ensure speedy implementation.

7. http://web.worldbank.org/archive/website01062/WEB/IMAGES/PAPER_6_.PDF
8. FICCI Report 2014 First North East Summit



Over and above for the existing projects, certain steps need to be taken to enhance the sector further, which are listed below.

Transmission

A large number of hydropower generating stations are expected to start functioning in the north-eastern region, during the twelfth and thirteenth plan period. These could be a major source of power to the states and create substantial surplus power which will need to be evacuated. Apart from the large transmission capacity to evacuate power from the region, an adequate system strengthening could be required within the North-Eastern Region (NER) to help ensure that the North-East is able to benefit from the increased capacity. Therefore, it is important that transmission development in the NER states is also taken up simultaneously with the development of the hydropower projects.[8] The following transmission capacity addition projects may be taken up in the immediate future.

- Rangia/Rowta Pooling Station-Azara 400kV D/c line (high capacity)
- Azara-Byrnihat 400kV D/c line (high capacity)
- Byrnihat-Silchar 400kV D/c line (high capacity)
- Silchar-Surajmaninagar 400kV D/c line (high capacity)
- Surajmaninagar-Melriat 400kV D/c line (high capacity)
- Melriat-Imphal 400kV D/c line (high capacity)
- Imphal-Kohima 400kV D/c line (high capacity)
- Kohima-Mariani 400kV D/c line (high capacity)
- Mariani-Silapathar Pooling Station 400kV D/c line (high capacity).[9]

Sourcing power from Bhutan

Under the 2006 agreement on cooperation in hydropower with Bhutan, India has developed over 1,400MW of hydropower capacity in the neighbouring country[10]. Under the agreement, India plans to develop 10,000MW of hydropower capacity in Bhutan by 2020. Upto 90 per cent of the hydropower is proposed to be exported to India.

Sikkim may be included in the North-Easter Region grid

Sikkim is included in the NER for purposes including the benefits under the North-East Industrial and Investment Promotion Policy, etc. However, in case of power, Sikkim is included in the eastern regional grid, thus depriving the North-East of the substantial Hydropower Potential that the state possesses. As Sikkim is a part of the North-East for almost all practical and economic purposes, it should be included in the North-East regional grid.

Solar energy

According to estimates by TERI, Assam has 240-260 clear days and 4.4-5.6 KWh of solar power potential per square meter per day while Tripura has a similar potential.[26] The option of solar power should be used for off grid power generation and electrification of remote villages. In environmentally sensitive areas like Kaziranga, the reliance on fossil fuel should be reduced by adopting solar power. Innovative ideas like solar trains and solar carts for jungle safaris, etc. should be explored.

In addition to this it is proposed that at least 1000 villages in Assam and Tripura should be provided off grid power through solar Photovoltaics (PV's) units.

Small hydropower

Small and mini hydropower generation is gaining importance in the world over as their impact on the environment is slight and they have smaller budgets and implementation time frame. The constructions of Small hydro power (SHPs) do not disturb the local habitat unlike large hydropower projects. The North-East has a large number of perennial river systems which can be harnessed to set-up small and mini hydropower stations catering to the needs of the local area. While many potential locations have been identified for setting up small hydropower projects the actual progress on the ground has been nominal. To give a boost to small hydro, a regional small hydropower policy with provisions for engaging PPP partners and addressing issues of land acquisition, power evacuation, etc. should be put in place.

Shale oil exploration

To exploit the massive shale oil and gas reserves in Assam and Arunachal Pradesh in an environmentally sustainable manner, a Shale Oil and Gas Authority should set-up. The authority should pool resources available with leading public sector oil and gas companies to focus on developing a cost effective technology for shale oil and gas exploration.

9. Development of Power Sector in the north-eastern region. http://planningcommission.gov.in as accessed September 2015
10. http://www.feedthegrid.net/as accessed September 2015

Action needed[11]

Proposed ideas	Actions recommended
Transmission	• Strengthen the link between the eastern and north-eastern Grid. • Strengthen intraregional transmission and distribution capacity by building more 400 KV transmission lines.
Bhutan power	• 25 per cent of power procurement from Bhutan should be allotted to the North-East. • Adequate transmission capacity connecting North-East India with Bhutan should be put in place.
Sikkim	• Include Sikkim in the North-East Power Grid.
Solar energy	• Take up PPP projects for off grid solar energy, to electrify 200 villages in Assam and Tripura. • Policy decisions to reduce dependence on fossil fuel in environmentally sensitive areas. • Explore the possibility of a solar eco-train to connect environmentally sensitive areas like Kaziranga.
Small hydropower	• Regional Small Hydropower policy to facilitate growth of small hydropower projects. • Facilitate land acquisition and power evacuation from small hydropower projects.
Shale oil & Gas	• Set-up Shale Oil and Gas Exploration Group with experts from ONGC, OIL India, etc.

Suggested timelines[11]

Proposed initiative	Suggested timeline
Strengthen link between eastern grid and north-eastern Grid	2016
25 per cent of power procurement from Bhutan to be allotted to North-East	2016
Include Sikkim in North-East Power Grid	2016
Policy for reduction of dependence on fossil fuel in environmentally sensitive areas	2016
Regional Small Hydro policy to facilitate growth of small hydro projects	2017
Set-up Shale Oil and Gas exploration Group	2017
PPP projects for off grid solar energy, to electrify 200 villages in Assam and Tripura	2018
Strengthen intraregional transmission and distribution capacity by building more 400KV Transmission Lines	2020

11. KPMG in India and FICCI porposed 2015

Infrastructure



Overview

One of the key developmental bottlenecks in the North-East is that of infrastructure. While a lot of progress has been achieved during the past few decades, the current status is far from adequate.

The region is connected by rail and road with the rest of India only through the 22km-wide Siliguri Corridor. A lack of connectivity through our neighbouring country, Bangladesh has made connectivity between most parts of the region and mainland India rather difficult and convoluted. For example, the distance between Agartala and Kolkata through the Silliguri corridor is three times than through Bangladesh.[1]

Added to this, inadequate infrastructure within the region and the lack of connectivity with the neighbouring countries has contributed considerably to the slow pace of growth in the region.

1. http://thediplomat.com/2013/11/geographys-curse-indias-vulnerable-chickens-neck/as accessed September 2015 as accessed September 2015

Status of road development

Being inexpensive and easier, road transport is an important mode of travel in hilly areas in comparison to other modes of travel.

The state highways and Major District Roads (MDRs) are extremely important for facilitating intrastate movement of people and goods.

Road density in North-East India

States	Road density/1000 sq. km	Density/1000 population
Arunachal	196.96	13.77
Assam	2936.51	7.83
Manipur	739.11	6.98
Meghalaya	438.67	3.89
Mizoram	292.11	6.35
Nagaland	1345.32	10.27
Sikkim	263.95	3.17
Tripura	3026.23	9.09
India	**965.73**	**2.77**

Source: 1 Material supplied by TRW, M/o Road Transport and Highways; 2 Annual Report, published by M/o Road Transport and Highways

Status of railways

North-East India has about 2,600 km of railway lines, but till now only three state capitals are connected by railways, with most of the lines lying in the states of Assam and Tripura.[2] Rest of the states are still waiting for the arrival of railway tracks to come even after the announcement of major railway projects by the Railway Ministry With an intention to connect all state capitals of the region, most of the projects are running behind schedule. The hilly terrain of the region makes it difficult and expensive to set-up rail networks in the region. As a result of this, hilly states such as Arunachal Pradesh, Manipur, Meghalaya and Mizoram are still deprived of a railway facility.

Rail connectivity with Bangladesh which existed before 1947 has ceased to exist, although a new connectivity through Tripura is proposed, the erstwhile railway line from Mahishahan in Karimganj District of Assam to Sylhet also needs to be revived.

A number of railway projects are delayed due to various reasons such as the difficult terrain, security situation, land acquisition related issues, etc.

Air connectivity

Intraregional air connectivity is still poor. In fact, the number of functioning airports in the region has reduced from 17 to 11.[3]

The status of the airports is as follows:

Airport	Present status	Connecting places
Lokpriya Gopinath Bordoloi International (LGBI) Airport, Guwahati	Operational	International connectivity
Lengpui, Mizoram	Operational	Daily air connectivity inside state
Umroi, Shilong	Operational	
Baljek, Shilong	Under construction	
Imphal, Manipur	Operational	
Agartala, Tripura	Operational	
Pakyong, Sikkim	Underway	

Source: FICCI Report 2014, First North-East summit

A greenfield airport has been proposed near Itanagar, the environmental clearance for which was received in April 2010.[4]

2. http://www.observerindia.com/cms/sites/orfonline/modules/analysis/AnalysisDetail.html?cmaid=62152&mmacmaid=62153asaccessed September 2015
3. https://en.wikipedia.org/wiki/List_of_airports_in_India as accessed September 2015
4. http://www.arunachalpradesh.gov.in/csp_ap_portal/pdf/Announcement/new-greenfield-airport-site.pdf accessed September 2015



Inland Water Transport (IWT)

Inland water transport can be a viable, cost-effective alternative compared to the high cost of expanding other modes of transportation.[5]

Two of the national waterways flow through the region: NW2 (Brahmaputra) and NW6 (Barak). However, the sector is underutilised. In Assam, the contribution of IWT to the overall cargo movement stands at 3 per cent which is less by a big margin compared to Bangladesh which is at 32 per cent.[6]

There is only one IWT terminal (Pandu, Assam) which meets the minimum requisite criterion of a terminal, and therefore significant investments will be required to develop the sector. In addition to developing the physical infrastructure, protocol route issues with Bangladesh need to be revisited and resolved.

5. Gateway to the ASEAN India's North-East frontier FICCI report
6. http://mdoner.gov.in/content/inland-waterways-ner accessed September 2015

Developments during the last year

Investment in infrastructure:

- The government has announced plans of investing over INR92,000 crore, for the development of roads and railways
- Under the SARDPNE (Special Accelerated Road Development Programme) for the North-East, INR35,000 crore is proposed to be invested to develop the Trans-Arunachal highway and for connecting all district headquarters by a two-lane highway (about 6400km).
- A new rail network is being created in addition to strengthening the existing network at a cost of INR57,000 crore.[7]
- Investment plans are also being drawn up by the telecom, power, civil aviation and shipping ministries.

BBIN (Bangladesh, Bhutan, India, Nepal) Initiative :

The BBIN initiative has identified connectivity as the priority, including smooth electrical grids, shared access to road, rail, air and port infrastructure, and ease of travel.

During the last year a sub-regional Motor Vehicle Agreement had allowed buses and later private vehicles with a BBIN permit to travel across borders between Bangladesh, Bhutan, India and Nepal.

Connectivity with Bangladesh:

- Two bus services, Agartala-Dakha-Kolkata and Guwahati-Shillong-Dakha were flagged off during the visit.
- An agreement was signed granting access to Chittagong and Mongla Ports.To benefit from the connectivity with the Chittagong Port, the following developments are proposed:
  - The railway link from Agartala to Akhaura railway junction in Brahmanbaria in Bangladesh is expected to be completed by middle of 2017.
  - This will be accompanied with India constructing a bridge across river Pheni to link up South Tripura district with Chittagong Hill Tracts.
- The Protocol on Inland Water Transit and Trade was renewed.
- Agreement between Bangladesh Submarine Cable Company Limited (BSCCL) and Bharat Sanchar Nagar Limited for leasing of international bandwidth for internet at Akhaura.

Connectivity with Myanmar and South-East Asia

- Trilateral Highway: The 3,200KM long India-Myanmar-Thailand (IMT) trilateral highway which forms a part of Asian Highway 1,[9] has been taken up as a priority and work is now going on at a fast pace. An agreement to operationalise the highway is expected soon.
- Kaladan Multimodal Project: The government has sanctioned a revised estimate of INR2904 crore for the Kaladan Multimodal project which is expected to provide connectivity between Mizoram and Sitewe Port. Work on the project is expected to be completed by 2016.

Proposed ideas

Integrated economic development corridor

The sub-regional grouping that has been formed between Bangladesh, India, China and Myanmar Economic Corridor (BCIM-EC) has the objective to develop stronger trade benefits and improve the citizen to citizen relationship. The BCIM can serve as a catalyst to generate enormous economic benefits in areas of trade, energy, transport, infrastructure and communication.[8]

North-East ring road

Some of the earlier government and chamber reports have proposed the development of a ring road connecting all the north-eastern states.

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7. The Economic times , http://articles.economictimes.indiatimes.com/2015-07-15/news/64449620_1_prime-minister-narendra-modi-north-east-chief-ministers
8. http://www.idsa.in/idsacomments/NorthEast%20inBCIM-EC_RBhattacharjee_171014
9. http://www.newindianexpress.com/world/India-Thailand-International-Highway-Opens-in-November/2015/09/02/article3006971.ece, September 2015

The proposed route for the ring road is as follows:



This should give a significant boost to the pace of development in the region.

Source - FICCI Report, First North-East summit

Trans-Himalayan highway

To provide alternate connectivity to the region, it is proposed that a Trans-Himalayan Highway be built to connect Arunachal Pradesh with North India via Bhutan, Sikkim and Nepal. The road is expected to follow the following route: Bomdila -Tawang-Lumla-Tashigang-Thimpu-Gangtok-Gangtok-Kathmundu-Patna. The length of the road will be about 2000km.[10]

While Bhutan has already agreed in principle for connectivity with Arunachal Pradesh through the Tashigang-Lumla route, permission is pending for a 15km section in the Tashigang-Lumla section. Connectivity in the Bhutan-Sikkim and Sikkim-Nepal ections will have to be negotiated.

Road	Length of stretches to be developed
Moreh-Imphal-Silchar-Karimganj-Sylhet	500
Guwahati-Ledo-Myitkyina-Kunming (Stilwel Road)	516
Guwahati-Tura-Jamalpur-Dhaka-Petrapole-Kolkata	223
Aizwal-Silchar-Agartala-Sabroom-Chittagong	611
Aizwal-Champhai	188
Total	**2038**

Source - Gateway to the ASEAN India's North-East frontier, FICCI reprot, 2015



10. FICCI analysis conducted 2015

Airports

There are 12 airports and airstrips in the region which are currently not in use.[11] It is proposed to develop airports which can open up and increase tourism, such that development of air connectivity can act as a strategic move to positively impact the north-eastern economy.

Regional airline operators can operate here and aim to bring about significant change in the NER.

While the airports in Arunachal Pradesh are being developed by the government, three greenfield airports are already proposed at Gangtok, Kohima and Itanagar. There are a number of other airports in the region that need to be developed as well, which are listed below.

Since Guwahati is a major airport, we recommend setting up a common maintenance workshop there, which could be used by all airlines on a payment basis.

Airports that need to be developed in phase I

State	Airports	Total investment envisaged (INR crores)
Assam	• Rupsi • Shella	750
Mizoram	• Tuirial	375
Tripura	• Kailashar • Kamalpur • Khowai	1125



North-East part of the smart city mission

The government's 'Act East' policy was considered while announcing the list of 100 cities and towns from across the country for the smart city initiative in India

Eight cities from the North-East were selected for the mega project namely Pasighat (Arunachal Pradesh), Guwahati (Assam), Imphal (Manipur), Shillong (Meghalaya), Kohima (Nagaland), Namchi (Sikkim), Agartala (Tripura) and Aizawl (Mizoram).

The concept of a 'Smart City' is aimed at enhancing the quality of life by helping to enhance the availability of core infrastructure needed for decent living in urban areas.

Concept of smart cities

The key focus of the government in the smart city initiative is to improve the lives of citizens. They tap a range of interventions-ICT and digital technologies, leading practices around urban planning, public private partnership (PPP), and policies. It includes leveraging IT and sensors into different aspects of the city, such as transportation, water management, waste management, smarter municipal management and planning. Some of the other elements include:

Objectives
Adequate water supply
Assured electricity supply
Sanitation, including solid waste management
Efficient urban mobility and public transport
Affordable housing, especially for the poor
Robust IT connectivity and digitalisation
Good governance, especially e-Governance and citizen participation
Sustainable environment
Safety and security of citizens, particularly women, children and the elderly
Health and education

11. https://en.wikipedia.org/wiki/List_of_airports_in_India as accessed September 2015, FICCI report 2014, First North-East Summit

In the approach to the Smart Cities Mission, the objective is a clean and sustainable environment, providing core infrastructure and application of 'smart' solutions. As per the government's smart city guidelines, the core infrastructure elements in a smart city would include:

Smart solutions

e-Governance and citizen services

- Public information, grievance redressal
- Electronic service delivery
- Citizen engagement
- Citizens city's eyes and ears
- Video crime monitoring.

Energy management

- Smart meters and management
- Renewable sources of energy
- Energy efficient and green building.

Waste management

- Waste to energy and fuel
- Waste to compost
- Waste water to be treated
- Recycling and reduction of Construction and demolition (C&D) waste.

Urban mobility

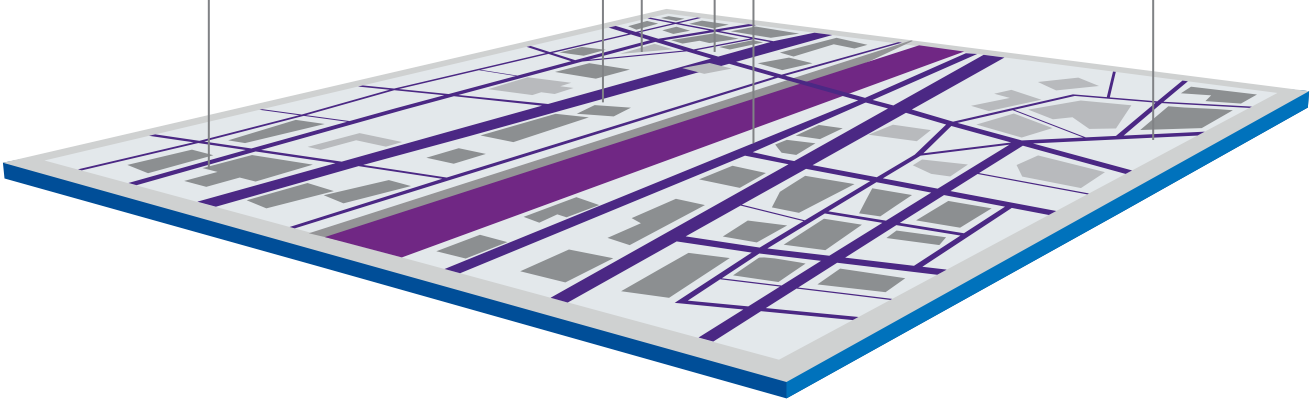
- Smart parking
- Intelligent traffic management
- Integrated multi-modal transport.

Water management

- Smart meters and management
- Leakage identification, preventive measures
- Water quallity monitoring.

Others

- Telemedicine and tele-education
- Incubation/trade facilitation centres
- Skill development centres.



Source: http://smartcities.gov.in/writereaddata/SmartCityGuidelines.pdf June 2015

How can the North-East leverage on the smart city mission:

The North-East faces a number of distinct advantages and challenges which it must consider while implementing the smart city initiatives:

Terrain: Thge region being essentially a hilly terrain, it is difficult to set-up large sewerage, water treatment and waste management plants. One has to opt for a distributed model instead of centralised treatment plants.

Connectivity: As seen in the earlier sections, setting up railways and roads in a hilly terrain has its own challenges. However, cities need to be connected to facilitate trade, education and healthcare. Since the region has large lakes, one can consider having a seaplane facility for transport.

Skill development centre: With a strong English speaking population and the government's focus in leveraging the North-East for Information Technology Enabled Service (ITES)/Business Operations Plattform (BOP)/ Knowledge Processing Outsourcing (KPO) sector as part of the Digital India initiative, setting up tele-education, online education, skill development centres seems like a must for this initiative.

Project development authority: Setting up a North-East Regional Project Implementing Authority can help in accelerating development.

In addition, the following initiatives should be taken by the North-East:

- Develop core skills needed to plan and implement smart initiatives.
- Regulatory framework and policies to define and facilitate innovative citizen service delivery models.
- Access to innovative, low-cost, participatory, and sustainable financing models, especially in non-revenue sectors.
- Interdependencies with other national missions, such as, the Swachh Bharat Abhiyan, Digital India, Atal Mission for Rejuvenation and Urban Transformation, Housing for All, etc.
- Prioritisation of highest impact ICT enabled infrastructure and services projects, which should also include social, economic, technical and financial parameters.

Innovative financial models that can be considered for smart city development are:

Project examples	Project model	Source of revenue	Source of capital
Smart parking	PPP model	Parking charge, advetisement revenue	Private player investment
Metro; Bus Rapid Transit System (BRTS)	PPP model	Ticket, smart cards, advertisment revenue	Private player investment, municipal funds, infrastructure bonds
Solid waste management; Sewerage	O&M model	Taxable revenue; sale of energy and recycled waste	Municipal funds, state funds, Viability Gap Funding (VGF), infrastructure bonds
Recreational gardens and parks	O&M model	Entertainment tax; tickets	Private player investment, green bonds, municipal bonds
Digital infrastructure	PPP model	Mobile app charges, service tax	Private player investment, municipal funds, state funds, VGF
City wide Wi-Fi	PPP model	Data charges	Private player investment, municipal funds, state funds, VGF
Solar panel installment	O&M/PPP model	Sale of power	Private player investment, green bonds, energy efficiency bonds, municipal funds, state funds



Actions needed[12]

Proposed ideas	Actions recommended
Integrated economic development corridor	
North-East Economic Development Corridor	• Create a Project Development Authority on lines of the Delhi Mumbai Economic Corridor. • Initiate discussions with Myanmar and Bangladesh to establish linkages and develop complimentary economic corridors in those countries.
Integrated Transport Corridor	• Develop the Trans-Meghalaya road and rail linkage, connecting Guwahati to Dhubri, via Shillong and Tura. • Agartala-Sabroom-Chittagong railway. • Imphal-Moreh-Tamu railway. • Silchar-Aizwal-Champai railway. • Jawaharnagar-Darlon railway.
Industrial and Economic Development Nodes	• Detailed feasibility study of the identified nodes. • Identify core economic activities for each node and design a master plan for the same. • Develop nodes under a suitable PPP framework.
Roads	
North-East Ring Road	• Carry out a complete survey of the existing roads which can become a part of the North-East Ring Road and survey for new road connecting Miao (Arunachal Pradesh)-Joypur (Assam). • Declare the project as a national project and allocate funds accordingly. • National Highways Authority of India (NHAI) may be asked to implement the project.
Trans-Himalayan highway	• Complete the proposed road connecting Tawang and Tashigang in Bhutan (permission pending for 15km (Tashigang-Lumla section). • Negotiate Bhutan-Sikkim connectivity (Lumla-Thimpu-Sangkari-Nathang valley/Juluk). Negotiate connectivity through Nepal.
Core networks	• Develop NH 53(Imphal-Jiribam) as a four lane express way. • Develop Stilwell road from Ledo to Myitkyina. • Develop Tura-Jamalpur road. • Develop Sabroom-Chittagong road. • Develop Aizwal Champai road as a four lane road.
Inland water transport	
	• A River Development Authority to implement a thorough IWT project. • Dredging of river Brahmaputra and Barak to ensure an actual LAD of at least 2.5 meters. • Uninterrupted navigational aids along the entire route. • Establish permanent channel stabilisation works. • Develop 12 river ports in Brahmaputra and eight river ports in Barak. • Develop townships and industrial areas along with the ports. • Rail and road connectivity to the ports.
Airports	
Operationalise non-operational airports	• In first phase operationalise six Airports – Operationalise Rupsi Airport with a runway extension for Boeing aircrafts – Operationalise Shella Airport as a regional hub to connect airports in Bangladesh and Nepal – Operationalise Kamalpur, Kailashar and Khowai Airports as alternative airports with connectivity to Bangladesh.
Capacity enhancement	• Revive Guwahati Flying Club to develop a full-fledged aviation training facility. • Airport hotels in PPP mode in Guwahati, Imphal and Agartala. • Common Maintenance Workshop in Guwahati to be used by all airlines.
Border townships	
	• Expeditiously implement Manipur Government plan for border township in Moreh. • New border townships at Zokhawthar, Avankhung, Pangsau Pass, Akahura, Karimganj, Dawki, Gasuapara, Mankachar and Daranga. • Work with neighbouring countries to develop similar townships across the border.

12. KPMG in India and FICCI analysis 2015

Suggested timelines[13]

Proposed initiative	Suggested timeline
Announce North-East economic development corridor	2016
Initiate discussions with Myanmar and Bangladesh to establish linkages and develop complimentary economic corridors	2016
Set-up river development authority	2016
Start dialogue with neighbouring countries to develop similar townships across the border	2016
Operationalise Rupsi Airport with runway extension for boeing aircrafts	2018
Implement border township in Moreh	2018
Develop 50 economic development nodes	2020
North-East ring road	2020
Upgrade core networks of roads to national standards	2020
Develop 12 River ports in Brahmaputra and eight in Barak	2020
Operationalise shella airport as a regional hub to connect airports in Bangladesh and Nepal	2020
Operationalise Kamalpur, kailashar and Khowai Airports as alternative airports with connectivity to Bangladesh	2020
New border townships at Zokhawthar, Avankhung, Pangsau Pass, Akahura, Karimganj, Dawki, Gasuapara, Mankachar and Daranga	2020
Agartala-Sabroom-Chittagong railway	2022
Imphal-Moreh-Tamu railway	2022
Trans-Himalayan highway	2022
Develop port townships	2022
Develop Trans-Meghalaya road and aail linkage, connecting Guwahati to Dhubri, via Shillong and Tura.	2025
Silchar-Aizwal-Champai railway	2025
Jawaharnagar-Darlon railway	2025
Dredging of Brahmaputra and Barak to ensure LAD of 2.5 metres	Ongoing

13. KPMG in India and FICCI analysis 2015

Education
(Academic and vocational)



Overview

While a number of quality institutions for higher education have come up in the region, primary and secondary education are still areas that require much improvement in terms of quality and outreach. In the area of college education too, while the number of colleges have grown significantly over the years, several of them suffer from a lack of qualified and trained teachers, inadequate infrastructure, laboratories are not sufficiently equipped and there is a general lack of connect with job requirements. The courses being taught at colleges are very often outdated and have very little practical job related requirements built into them.

Status of higher education

There are 40 universities/deemed universities and nearly 800 colleges spread across the region.[1] The number of colleges per lakh population is lower than the national average in all the north-eastern states combined except Manipur where it is marginally higher.[1] The fact that many parts of the region have a hilly terrain with sparse population spread out over large geographical areas has resulted in making access to higher education difficult for the rural population. As a result the gross enrollment ratio in higher education is much lower than the national average.

State	No. of colleges	Colleges/lakh people	Average enrollment
Arunachal Pradesh	26	16	1227
Assam	485	13	950
Manipur	79	26	1117
Meghalaya	61	17	927
Mizoram	21	22	526
Nagaland	57	22	486
Sikkim	11	14	994
Tripura	39	9	1036

Source. Analysis by FICCI 2015

2. Analysis conducted by FICCI,2015

Technical education: Although the region has over 40 engineering colleges and few very good institutions of technical education, the demand far outstrips the supply.[2] As a result many students are forced to either migrate outside the region or fall prey to dubious institutions that have mushroomed there.

Apart from engineering colleges, there are also about 34 other technical institutions offering undergraduate and post graduate diploma courses in various streams.[2]

Institutions offering diploma courses

State	No. of institutions	No. of seats
Arunachal Pradesh	2	320
Assam	12	1803
Manipur	3	285
Meghalaya	3	440
Mizoram	4	480
Nagaland	3	285
Sikkim	4	390
Tripura	3	440
	34	**4443**

Source: Analysis conducted by FICCI 2015

Medical education: The region has 11 medical colleges with an intake capacity of 1,176 at the MBBS level and 501 seats in the post graduate level. With only 2.45 per cent of the country's intake capacity in medical colleges,[2] the region suffers from an acute shortage of doctors and results in an impact on the healthcare system.[2]

There is therefore an urgent need for enhancing the medical education infrastructure in the region.

The region also has a shortage of nursing and other paramedical practitioners. Given the high demand for nurses from the North-East in other parts of the country and the regional demand, there exists a huge potential for development of nursing and other paramedical education infrastructure.

State	No. of medical colleges	MBBS seats	PG seats
Assam	5	626	362
Manipur	2	200	72
Meghalaya	1	50	20
Sikkim	1	100	22
Tripura	2	200	25
	11	**1176**	**501**

Source. Analysis by FICCI 2015



2. Analysis conducted by FICCI,2015



Status of vocational education

Industrial Training Institutes (ITIs): In the North-East there are currently 63 ITIs of which 28 are in Assam, with a total training capacity of about 5860 candidates per year under the Craftsman Training Scheme (CTS). Additionally about 4230 candidates are trained per year in a short-term Modular employable skills (MES) course through the ITIs. Thus the total training capacity of ITIs currently is approximately 10,000 per year. In addition to this 14 new ITIs are also being set-up.[3] Going forward, the government plans to set-up 10 new ITI every year for next five years.

State	No. of ITIs
Assam	28
Meghalaya	5
Mizoram	2
Tripura	12
Manipur	7
Nagaland	2
Arunachal Pradesh	5
Sikkim	2
Total	**63**

Source. Analysis by FICCI 2015

Demand for skilled manpower

For a region like the North-East with good agro climatic conditions, fertile well irrigated land and a large percentage of population engaged in agriculture, skilling in sectors related to agriculture, food processing, tea, horticulture and supporting non-agricultural sectors is key to faster growth. The sectors in which a high demand for skilled manpower is expected are listed below:

Construction: The demand for skilled manpower can be seen in sectors like welding, electrician, plumbing and tools and machinery (auto mechanic) when infrastructure projects for the development of the 'bridge' between ASEAN and India starts.

Tourism and hospitality: The North-East has a huge tourism potential and a number of renowned brands are already establishing their presence in the region. A number of five star hotels are also coming up. This could boost the demand for skilled manpower in the industry.

Healthcare: The people of the Welding, Electrician, Plumbing and Tools and Machinery (Auto Mechanic) are generally part of the service industry. Apollo, Max Health Care and Narayana Hrudalaya are few of the branded national names who have opened their hospitals here. This region also has the potential to be developed as a healthcare destination. To meet the increasing local demand and for development of health tourism, the demand for skilled healthcare professionals is expected to grow rapidly.

Handloom and handicrafts: Handloom weaving is a way of life and intensely linked with the culture and heritage of the North-East. Assam, has the highest number of looms in India's, at over 13 lakh (46 per cent of India total)[4]. In 2009-10, Assam produced 174 million metres of handloom fabric.[5] Sualkuchi, a town in Assam has earned the name of the Manchester of the East for its silk products. Therefore, there is an urgent need to devise focussed skill improvement programmes for the handloom sector.

Horticulture: The NER is one of the richest reservoir of genetic variability and diversity of different crops i.e. various kinds of fruits, different vegetables, spices, ornamental as well as medicinal and aromatic plants. The diversity for horticultural crops of this region has mainly been managed by local farmers, often women.[6] Skill improvement programmes in this sector must focus on organic cultivation, modern tools for improving productivity, post-harvest management and marketing of horticultural products.

Automobile sector: A major mode of transportation from Assam and other North-East states is via road. With the setting up of the East-West Corridor and four lanning of the state highways, there can be a boom in road transporters in this region. With the improvement of road infrastructure, there can be a demand for roadside mechanics near the highways. The auto mechanics may be able to find self-employment opportunities across the national and state highways.

3. Analysis conducted by FICCI,2015
4. http://journals.du.ac.in/ugresearch/pdf/A.%20Aggarwal%20%201.pdf
5. NSDC skill gap Study , North-East 2012
6. http://www.kiran.nic.in/pdf/publications/Diversity_of_Horticulture.pdf accessed September 2015

Proposed ideas

North-East India knowledge hub

TheNorth-East has a number of quality education institutions and has the potential to emerge as a hub for education. The region has 40 universities and deemed universities, 11 Medical Colleges, over 40 engineering colleges, 31 poly-techniques, one IIM, one IIIT, Tata institute of Social Sciences and a large number of colleges and other institutions.[7]

A number of cities have already emerged as hubs of quality education and the institutions offer education in a large number of specialised fields.

The neighbouring countries of Bangladesh and Myanmar have a growing demand for quality education. This provides the region an opportunity to position itself as a hub for quality education in the entire sub region. The prevalence of English as the general medium of instruction gives the region an added edge over many of the neighbouring countries.

Apart from attracting students from other states and the neighbouring countries, the region also needs to be positioned as a destination for investments in the education sector. While a number of private sector investments have already materialised, there is a potential for even greater investments. Also there is great opportunity for the existing institutions and universities to collaborate with other such institutions outside the region.

Enhancing capacity for technical education institutes

To meet the growing demand for technical education in the region the following steps are suggested.

North-East technical university: To help ensure uniform high quality technical education across the region, a North-East Technical University should be set-up with central government funding.

Engineering college in every district: To make technical education available to students in far-flung areas of the region and to create a conducive environment for technology led economic growth, it is proposed that an engineering collage should be set-up in each district of the region, under a suitable PPP framework wherever feasible.

Regional technical education fund: A regional technical education fund should be created with contributions from the central and state governments, multilateral agencies, etc. The fund is expected to be focus on enhancing the capacity of existing technical education institutions and provide viability gap funding for new technical institutions.

Enhancing capacity for medical education

It is proposed that the number of medical colleges in the region should be increased to at least 40 to reach a target of about one medical college per ten lakh population. Similarly, the number of institutes for nursing and paramedical sciences should be increased to at least 80 to achieve a target of one nursing/paramedical institute per 5 lakh population. This is not possible through government intervention alone. It is therefore suggested that a suitable PPP model should be developed to attract private sector investment. Further the Medical Council of India should consider relaxing norms which do not have a bearing on quality of education to facilitate faster growth of medical education in the region.

Approach to skill development

The skill development initiative in the region must focus on few core areas in which the region has core competencies or there is a potential for future development.

Centres of excellence for skill development

It is proposed that seven centres of excellence on each of the above mentioned skill areas should be set-up in the region. The centres should be located in an area where the most industrial/economic activity related to the particular trade is happening.

Each centre of excellence may be linked to smaller centres in other states of the region. For example, a centre of excellence in tourism and hospitality located in Kaziranga, Assam may be linked to smaller centres in Itanagar, Shillong, Udaipur, etc., thus developing a hub and spoke model.

The centres could be developed using the existing skill development infrastructure in ITIs, other colleges and universities. While each centre could have more than one trade, it could focus on one specific trade to develop advanced level expertise.

The centre of excellence may be developed by the central government in partnership with the state governments and private parties through a suitable PPP mechanism while the spoke centres may be developed by the state governments.

Skill university

An open Skill University may be developed to cater to the needs of those aspiring for higher vocational qualifications. The university would offer B.voc, M.voc and PhD in skilling. Apart from catering to the aspiration for higher education of those opting for vocational education, the university can also help in bridging the demand supply gap for trainers in the region.

7. Analysis conducted by FICCI,2015

Upgrading industrial training institutes

Upgradation of ITIs may be taken up in a phased manner through a PPP mechanism, where industry partners are invited to invest in the upgradation of particular trades and also provide inputs for training. The model adopted for the automobile trade in some ITIs may be replicated in other ITIs across the region and also across other trades with suitable modifications. Essential elements of the model are given below.

A model for PPP with ITIs for auto trade: The physical infrastructure is provided by ITIs, while the private partners provide the modern engines, gear boxes and technologically upgraded tools and equipment. Tata Motors dealers have also opened a service station within the campus of an ITI so that the trainees get a hands-on experience.

Short-term and long-term programmes in 'Mechanical Motor Vehicle', 'Diesel Mechanic' and 'Driving' are conducted across the ITIs. The NCVT courseware has been upgraded by private partners (Tata Motors/Hyundai etc) to make it technologically advanced as per the demand of the industry.

The existing ITI faculties are trained by private partners on the upgraded course contents. Student mobilisation is handled by the ITI authorities, while the National Curriculum of Vocational Training (NCVT) certificate of the Government of India is awarded on successful completion of the training.



Actions needed[8]

Proposed ideas	Actions recommended
Higher education	
North-East knowledge hub	• Develop 10 knowledge hubs across the region, (each hub to focus on a specific area of learning). • Create adequate urban amenities in the education hubs. • Package for Health Care Sector on the lines of NEIIPP.
Enhancing capacity for technical education	• Set-up North-East Technical University. • Set-up one Engineering college in each district through PPP/goverment funding. • Create a North-East Technical Education fund, to enable fast paced development of technical institutions. • Set-up 29 more medical colleges through government funding/PPP Mode. • Revisit norms for granting permission for setting up medical colleges.
Skill and Vocational education	
Centres of excellence for skill development	• Set-up seven centres of excellence to focus on important skill areas. • Develop smaller outreach centres across the region to be linked to the centres of excellence.
Skill university	• Set-up a North-East Skill University with funding from the central government.
Upgrading ITIs	• Each ITI in the region should identify core courses on which to focus. • Facilities for the core courses should be upgraded with private sector support in a PPP arrangement.

Suggested timelines[8]

Proposed initiative	Suggested timeline
Create a North-East technical education fund, to enable fast paced development of technical institutions.	2016
Set-up North-East technical university	2017
Set-up one engineering college in each district	2018
Set-up a North-East skill university with funding from the central government.	2018
Develop 10 knowledge hubs across the region	2020
Set-up seven centres of excellence to focus on important skill areas.	2020
Upgradation of all it is	2020
Set-up 29 more medical colleges through government funding/PPP mode.	2022

8. KPMG in India and FICCI analysis 2015

Environment



Overview

The North-East holds great significance from an ecological and evolutionary point of view. This region is rich in biodiversity and has the largest number of endemic species of plants and animals as compared to any other part of India.[1] This region represents a confluence of the Indo-Malayan and Indo-Chinese bio-geographical realms.[1]

While it is well recognised that this region is a biodiversity hotspot, information and data around biodiversity, distributional patterns, population dynamics, relationships between landscape variables and species composition, impacts of habitat fragmentation, and the role of biological corridors are sketchy or unavailable, except for very few species. This information is vital for determining management strategies for the use of biodiversity resources.

It is important to develop water management, forest development, and sustainable livelihood, carbon-trading policies which could provide benefits in the form of hydropower, agriculture, transportation, and tourism. These benefits which could accrue at both regional and local levels, may, in turn, directly accelerate growth and poverty reduction.

1. Lok Man S. Palni. "Conservation of Himalayan bioresources:An ecological, economical and evolutionary perspective", Nature at Work Ongoing Saga of Evolution, 2010.

Existing strategies for tackling climate change

The Government of India, identifying the need to address the gargantuan challenge of climate variability and change, launched a National Action Plan on Climate Change (NAPCC) in 2008. This national strategy for climate change outlines eight national missions running until 2017 addressing mitigation o as well as adaptation to the impacts of climate change.[2]

The eight missions with special relevance to adaptation to climate change are:

1. National solar mission to promote the development and use of solar energy for power generation and other uses with the ultimate objective of making solar power competitive with fossil-based energy options.[2]
2. National mission for enhanced energy efficiency - enhancing energy efficiency by mandating specific energy consumption reduction in large energy-consuming industries.
3. National mission for sustaining the himalayan ecosystem - to conserve biodiversity, forest cover, and other ecological values in the Himalayan region.[3]
4. National water mission - to help ensure integrated water resource management in order to conserve water, reduce wastage, and determine more equitable distribution.
5. National mission for a 'Green India'- to enhance ecosystem services (e.g. carbon sequestration and storage, hydrological services, and biodiversity), along with provisioning services (e.g. fuel wood, small timber, and NTFPs).[4]
6. National mission on sustainable habitat - to make the habitat sustainable through improvements in energy efficiency in buildings, management of solid waste management and modal shift to public transport.[5]
7. National mission for sustainable agriculture - to increase the adaptive capacity of the agricultural sector to climate variability and change through the development of climate-resilient crops, expansion of weather insurance mechanisms, and agricultural practices.
8. National mission on strategic knowledge for climate change - to gain a better understanding of climate science, impacts and challenges.

The missions form the core of the action plan, representing multipronged, long-term and integrated strategies for achieving goals in the field of climate change. All national missions have been approved by the Prime Minister's Council on Climate Change and are at different stages of implementation.

Subsequently, the Ministry of Environment and Forests (MoEF) has issued directions to all states to prepare state-specific State Action Plans on Climate Change (SAPCC), in which the states outline state level measures in mitigation and adaptation of climate change.

North-East Indian states have drafted their respective specific statehave drafted their respective specific State Action Plans on Climate Change (SAPCC) and submitted the same to the Ministry of Environment (MoEF) and Climate Change (CC) for endorsement. All of them, other than Assam's have been endorsed. Assam's State Action Plan on Climate Change is under consideration. Implementations of the plans have also begun and are in varying stages.



2. http://www.c2es.org/international/key-country-policies/india/climate-plan-summary
3. "Maharashtra sets up cell to increase water use efficiencvy", PTI-The Press Trust of India Ltd., October 7 2010 Issue
4. Ministry of Environment and Forests-National Mission for a Green India
5. "CM to chair environment safeguard mission", The Times of India, August 31 2008 Issue.

Proposed ideas

Adaptation and mitigation strategies for climate change

Policy measures:

- Promotion of green infrastructure and development of climate friendly designs for the urban sector in water supply, sewerage, urban housing.
- New norms for building codes-government buildings to mandatorily follow green building norms in line with the Energy Conservation and Building Code of the Bureau of Energy Efficiency, Government of India.[6]
- Policy for procurement of environment friendly vehicles in government departments, national parks like Kaziranga, etc.
- Promotion of alternative and ecofriendly technologies in energy and power generation.
- Need to incentivise the use of green technology by private sector as well as by local populace.
- Policy support for restoration of the old wetlands and stream flows, mainly in the urban areas, to enhance the drainage of the flood water and reduce water logging.[7]

Forests, environment and biodiversity

- Enhancing the quality of existing forests and upgradation of the degraded forest through regulation and monitoring of invasive species and identification of non-native species that can survive climate change and be beneficial to the ecosystem, management of insects and other pathogens, adoption of short rotation species, preventing forest fragmentation by conserving contiguous forest patches, eco restoration of degraded open forests, and restoration of grass land.[6]
- Need to increase forest-based biomass production. Promote bamboo, cane and other Non-timber forest products (NTFPs) which impact the environment less. An improved ecosystem could help augmenting incomes of those dependent on them.
- Linking of forests through corridors enabling species migration.
- Need to form agencies for resolution of man animal conflicts.
- Need to modernise existing agencies mandated with protection of forest resources.
- Need to take immediate measures to halt encroachment through measures for rehabilitation of the affected people. Need to reclaim areas surrounding the crucial biosphere and sensitive wildlife zones.
- Need to develop alternative routes which do not impact national parks like Kaziranga.

Sustainable livelihoods

- Need to adapt agriculture, horticulture and pisciculture to modern times through funding research and development.
- Dependence on rains for agriculture needs to be brought down through modern irrigation techniques.
- Crop yield needs to be improved through modern techniques.
- Promotion of the use of ICT, rainwater harvesting, drip irrigation, post-harvest infrastructure, cold storages, development of crop insurance, etc. can be some areas of focus.
- Capacity building for communities dependent of agriculture needs to be taken up in a big way.
- Strengthening of institutions involved in improving agriculture and its allied areas and those involved in sustainable livelihoods for the rural community.

Disaster preparedness

- Need to strengthen existing machinery for monitoring of norms and guidelines.
- Need to strengthen the disaster response strategies.

Sensitisation:

- Sensitisation of governmental machineries about climate change such that they can deal with it in an appropriate way.

Sensitisation of masses for enabling them to adapt to climate change and accept the implementing machinery promoted by the government and other multilateral agencies.

Nature policy for the states

To help ensure preservation of the extremely fragile natural heritage of the region, all developmental plans must naturally be moderated with the concerns for ecological integrity. It is therefore recommended that the state governments of the region must put in place a well thought out nature policy. Some key aspects that the nature policy must address are:

- Identify ecological 'red lines' which must not be crossed in the process of economic and industrial development.
- Provide fiscal/other incentives for nature conservation.
- Create facilities for recording, documenting and preserving the bio diversity of the region.
- Facilitate research, and make it profitable to be ecologically sensitive.

6. http://www.vasudha-foundation.org/
7. http://www.nicra-icar.in/nicrarevised/

Water management strategy

The North-East receives plenty of rainfall and has a large number of water bodies, yet many parts of the region suffers from water shortages during the winter, while other parts suffer from floods. Efficient management of our water resources is not only critical for preserving biodiversity, it is also critical for determining food security and agriculture. The following key steps are suggested for efficient water management:

- Propagation of forests and social forestry initiatives to arrest soil erosion and to preserve the water retention capacity of the soil.
- Rain water harvesting should be made mandatory under building bylaws of the urban areas across the region.
- Appropriate technology should be used to allow percolation of rain water into the soil through paved surfaces like roads and courtyards.
- Reach of irrigation should be extended to at least 75 per cent in the plain areas.
- Concrete steps should be taken to replace jhum cultivation with terrace cultivation.
- Agriculture departments along with irrigation and flood control departments should hold capacity building exercises to increase awareness about water conservation.
- In addition to the above, in order to facilitate the sustainable use of water resources, a thorough long-term plan should be drawn up for IWT, fisheries development and hydro power development.

Community led forest management

The importance of community involvement in forest management has gained widespread acceptance globally, and is critically important in the NER, where the vast bulk of forests, particularly in the hill states are legally owned by the community.[8] It is therefore proposed that forest management in the region should be aligned to involvement of the community. This could involve:

a. Set-up joint management groups comprising of community leaders and representatives from the forest department.

b. Implementing centrally funded conservation schemes through joint management groups and indigenous institutions.

c. Empowering and enabling traditional institutions and building modern management capacities within them. This way the forest departments will have viable partners to craft new landscape management systems that rely on networks of villages.[8]

d. Communities will develop their own resource management plans that address conservation and livelihood issues.[9]

e. Support community efforts to intensify land productivity, especially on sites where terracing and irrigation are possible.[10]

f. Agroforestry systems with a mix of commercial products, including timber, fibre, spice, and medicinal plants, could also help to generate income, taking the pressure off steeper slopes and help reduce jhuming.

Biodiversity and carbon trading

To maintain and further develop the biodiversity wealth of the region, a number of activities could be further explored. This includes assessment of capacity-building needs in the forest departments, and a focus on protected area management plans. Many such areas do not have management plans, or their effectiveness is very limited. Besides strengthening these systems, other potentially advantageous activities include cataloguing of flora and fauna and making the information widely available, research in the use of plants, working with communities to improve their livelihoods through increases in local productivity, and collaboration between the different stakeholders.[10]

North-East carbon sink

Any natural or manmade reservoir that absorbs more carbon than it emits is a carbon sink. The substantial forest cover available in North-East India, Myanmar and Bhutan has been playing such a role. With proper management, this region could be converted into one of the most powerful carbon sinks of the world and be retained as a very important biodiversity hotspot of the world.

Shifting of major roads away from hotspots

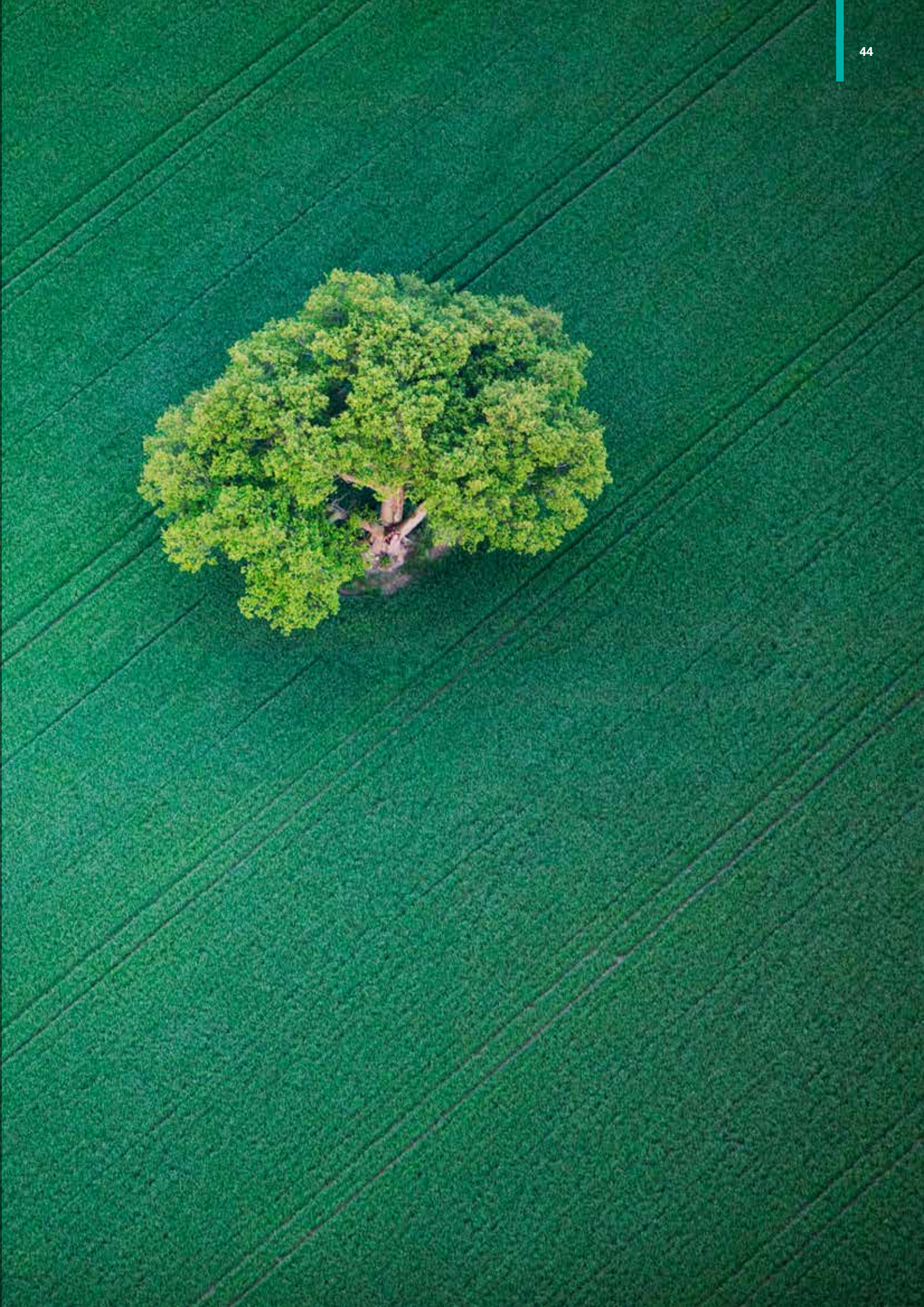
National and other major highways passing through important biodiversity hotspots like Kaziranga is a major cause of concern. As far as practicality is concerned all such highways should be shifted away from the core bio diversity hot spots. Wherever it is not possible to do so, dedicated corridors which are not disturbed by the traffic should be developed by creating under passes/over bridges to mitigate the risk faced by animals. A thorough assessment of all such roads should be carried out immediately.

8. Development and Growth in Northeast India - http://www.worldbank.org/reference/
9. http://nerlp.gov.in/
10. http://www.worldbank.org/reference/

Action needed[11]

Proposed ideas	Actions recommended
Adaption and mitigation strategies for climate change	• Promotion of green infrastructure, environment friendly vehicles, eco-friendly technologies in power generation, restoration of old wetlands. • Enhancing quality of existing forests, increase forest-based biomass production, promote bamboo, cane and other NTFPs, linking of forests through corridors, modernise existing agencies, halt encroachment. • Address livelihood issues by modernising agriculture, use of ICT, rainwater harvesting, drip irrigation, post-harvest infrastructure, etc. • Disaster preparedness and sensitisation.
Nature policy for north-eastern states	• Create a consultative mechanism involving all the north-eastern states to come up with a uniform nature/environment policy across the region.
Water management	• Social forestry initiatives near water bodies. • Rain water harvesting in urban areas. • Extend reach of irrigation to 75 per cent. • Capacity building exercise on water conservation. • Sustainable water usage plan focusing on IWT, fisheries and hydropower.
Community led forest management	• Set-up joint management groups for forest management. • Implement schemes through the joint management group. • Capacity building of indigenous institutions. • Forest resource management plan to be developed by the community through joint management group. • Agro forestry initiatives.
Biodiversity and carbon trading	• Reassess forest classification system through a consultative mechanism involving all the north-eastern states.
Shifting of major roads away from biodiversity hotspots	• Carry out a thorough assessment of all roads passing through biodiversity hotspots. • Either shift the roads or create dedicated animal corridors, by creating underpasses/over bridges.

11. KPMG in India and FICCI analysis 2015



Policy initiatives



Overview

That government policy has a direct bearing on economic development and in case of disadvantaged regions like the North-east, a proactive government policy can play a major role in giving direction and pace to the growth of business and investment. Since the late 1990s the Government of India has undertaken a number of important policy initiatives to attract investment into the region, to help ensure greater government spending in key sectors like physical and social infrastructure, with the aim of providing access to the markets in South-East Asian countries.

So far results have not shown much progress. It has been suggested that a lack of consistency in the policy environment has been one of the main reasons behind this. However, it is felt that the lack of a holistic approach to policy making in the region has been an equal, if not a greater reason behind the less than impressive economic growth of the region.

Some of the policy initiatives that may be considered are listed below.

Recommended policy initiatives

Policy for investment promotion

North-East Industrial and Investment Promotion Policy: The NEIIPP which came into effect in 2007 offered a wide array of benefits including a 30 per cent capital investment subsidy, income tax exemption, excise duty refund, interest subsidy, etc. The policy after going through a number of subsequent dilutions, including partial withdrawal of excise duty benefit, etc. has now been suspended, when some results were beginning to be visible and investors' interest was increasing visibly.

It is recommended that the policy may be reinstated with suitable modifications to give greater benefits to small enterprises from the region and focussing on sectors of comparative advantage. It is also recommended that sectors like infrastructure, education, healthcare and environment related projects should be brought under the ambit of the policy.

Supporting small businesses and entrepreneurs

- Local entrepreneurs should be assisted with financial and administrative support, especially for the marketing sector so that improved infrastructure can be utilised well for the economic growth of local people.
- A North-East Innovation Fund may be created. By way of innovation, a new arena of development and growth can come out.
- Artisans and the handicraft industry needs to be promoted through a well-coordinated programme with assistance from the central government. North-eastern products should get a place in national and international exhibitions to get further promotion and branding. These activities can also have a spill-over effect on the tourism industry.[1]

Ease of doing business

India ranks 134th among 189 countries, according to a World Bank report on the ease of doing business. On ease of starting a business, it ranks even lower: 166.[2] The situation in the north-eastern states of India is even worse. Although a number of incentives are available for starting businesses in the region, often the procedure and paper work involved in securing these incentives diminishes the efficacy of the incentive schemes. There is a need to drastically reduce the permissions and paperwork required to set-up businesses, secure incentives and to run the businesses.

Land acquisition for industry

While land acquisition across the country is becoming increasingly difficult and time consuming, the situation in the North-East is even more complicated as in the hilly states and some other areas in Assam land transfer is restricted by statute to only scheduled tribes. The states of the region need to work with the central government and industry to find a way so that industrial growth is not restricted while protecting the interests of tribal people.

Act east policy

Decentralising dialogue: While international relations dialogue is expected to continue to be handled by the central ministry, some amount of interaction, particularly the adjoining provinces should be allowed at the local level in the interest of operational ease. The following initiatives are proposed to facilitate such local level interactions.

Facilitating border trade: To facilitate border trade with neighbouring countries, some of the policy initiatives that had been discussed in earlier policy initiatives like simplification of paper work, helping of traders at the border trade centres, revisiting border trade agreements, reviewing RBI regulations should be taken up immediately.

Biodiversity: To establish the region as a biodiversity zone, cooperation between the authorities and stakeholders in North-East India, Myanmar, and Bhutan seems to be of paramount importance. It is proposed that a subregional dialogue on establishment of an international biodiversity zone should be started immediately. The primary objective of the dialogue process should be to identify a workable model for joint management of the biodiversity resources.

Myanmar focus: Increased focus should be given to develop a trade relationship with Myanmmar. The border trade agreement with Myanmar should be revisited to see if the number of tradable items through barter system can be increased. Also, connectivity to the North-East can be improved if we have direct flights from other parts of India to Myanmar.

1. FICCI Report 2014 First North East Summit
2. http://economictimes.indiatimes.com/news/economy/indicators/indias-world-bank-ranking-on-ease-of-business-will-improve-further-arun-jaitley/articleshow/49564615.cms accessed October 2015



India at 75: Projections for the North-East



Implementation of the plan aims to bring about fundamental changes in the regions socio economic structure. It is expected that by 2021-22, the region will emerge as one of the fastest growing regions of the country and will contribute substantially to the national GDP. The region may become a hub of connectivity, trade and commerce for the South-East Asian subregion and become a major player in the subregional economic development. The regions integration with the national economic mainstream can be complete and the region may be India's gateway to the east in the true sense of the word.

Social impact

- Sustainable livelihood
- Improved formal and vocational education
- Improved connectivity can give access to better social amenities
- Access to power can improve the quality of Life
- Access to vocational education and employment can have a positive impact on the society.

Economic impact

- Investment of over INR5 lakh crore is expected to have a huge trickledown effect
- Direct employment for around five million people
- Smooth trade with neighboring counties and ASEAN
- Exponential growth in manufacturing
- Exponential growth in services led by tourism.

Environmental impact

- Reduced impact because of cleaner modes of transport.
- Environmentally conscious tourism.
- Conservation of biodiversity.
- Clean energy sources like solar, wind, etc.
- Planned development can help put environmental protection mechanisms in place.

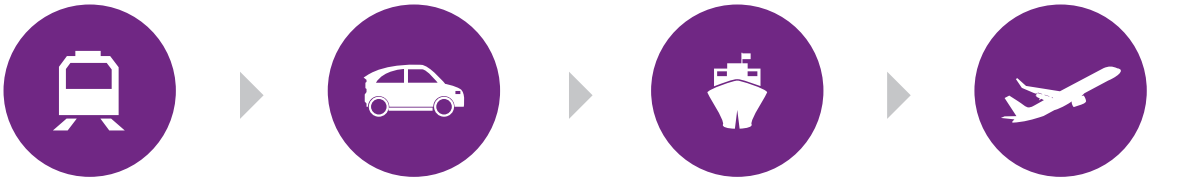
Improved connectivity

By 2021, the region is expected to be smoothly connected, with the rest of India, neighbouring Countries and ASEAN. It seems possible to drive down to Bangkok from Guwahati in a little over 48 hours. River navigation can enable ships from the Kolkata Harbour to come directly to Pandu and Badarpur.

Flights can connect remote parts of the region and also all South-East Asian countries. Benefits may become visible through improved farm productivity, rising GSDP, international trade, a growing manufacturing base and a strong service sector.

Growing trade

With the proposed development plan, it is expected that the North-East may account for at least 30 to 40 per cent of India's trade with Myanmar, Bangladesh and Bhutan.[1] The region may also account for a substantial percentage of India ASEAN Trade. With 10 border townships, border trade and joint manufacturing activities are expected to flourish.



Rail
- All state capitals
- Neighbouring countries.

Road
- North-East ring road
- Asian highway
- Bangladesh, Bhutan, Myanmar.

Inland water ways
- Primary mode of goods transport
- Transit through Bangladesh.

Airports
- 24 operational airports
- Connected to Dhaka, Sylhet, Bangkok, Yangon.

Sector focus

Energy

The North-East may be producing close to 10,000MW of surplus power, part of which can be sold to neighbouring countries. Shale Oil Exploration is likely to have begun by then in Assam and Arunachal Pradesh thereby meeting a substantial part of India's fossil fuel requirements. We also hope to see substantial developments in renewable energy like solar and wind energy. Coal mining in all the north-eastern states may be regulated and guided by a broad mining policy. While energy (power, oil and gas) is expected to become one of the most important industry in the region, the abundant availability of energy may also spur growth in the manufacturing sector.

Education

The North-East is expected to emerge as an education hub for the entire South-East Asia. Institutions like TISS, IIM, IIT, IIIT and others may have institutionalised collaboration with neighbouring countries. These institutes may emerge as centres of excellence and produce leading research work. Private investment in education is also likely to pick up, invariably affecting the industry.

Vocational education and skill development

Vocational education is expected to be institutionalised and students will be able to make a career choice while still in school. A network of skill development centres and a Skill University is expected to provide a major fillip to skill development activities. The region may also emerge as a major supplier of skilled manpower, particularly for service sector industries. Increasing local demand due to higher economic activity can help ensure that only higher skilled work force may migrate from the region and command higher salaries.

Environment

Focus may grow on environmental protection and safeguard mechanisms are expected to be in place by 2021. Several green businesses including ecotourism can provide a further fillip to conservation efforts. The region may be able to improve its agricultural output in a sustainable manner. The fresh water resources available in the region is expected to be harnessed and conservation efforts may begin to show results.

Tourism

Improved connectivity, and a marketing campaign can give a major boost to tourism and it is expected that the region may be firmly established as a major ecotourism destination of choice for high end tourists from across the world. The North-East may account for about 10 per cent of India's foreign exchange earnings from tourism.

1. KPMG in India and FICCI analysis 2015

About KPMG in India

KPMG in India, a professional services firm, is the Indian member firm of KPMG International and was established in September 1993. Our professionals leverage the global network of firms, providing detailed knowledge of local laws, regulations, markets and competition. KPMG has offices across India in Delhi, Chandigarh, Ahmedabad, Mumbai, Pune, Chennai, Bengaluru, Kochi, Hyderabad and Kolkata. We strive to provide rapid, performance-based, industry-focussed and technology-enabled services, which reflect a shared knowledge of global and local industries and our experience of the Indian business environment.

KPMG International

KPMG is a global network of professional firms providing Audit, Tax and Advisory services. We operate in 155 countries and have more than 155,000 people working in member firms around the world.

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KPMG's Tax services are designed to reflect the unique needs and objectives of each client, whether firms are dealing with the tax aspects of a cross-border acquisition or developing and helping to implement a global transfer pricing strategy. In practical terms that means, KPMG firms work with their clients to assist them in achieving effective tax compliance and managing tax risks, while helping to control costs.

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About FICCI

Established in 1927, FICCI is the largest and oldest apex business organisation in India. Its history is closely interwoven with India's struggle for independence, its industrialisation, and its emergence as one of the most rapidly growing global economies.

A non-government, not-for-profit organisation, FICCI is the voice of India's business and industry. From influencing policy to encouraging debate, engaging with policy makers and civil society, FICCI articulates the views and concerns of industry. It serves its members from the Indian private and public corporate sectors and multinational companies, drawing its strength from diverse regional chambers of commerce and industry across states, reaching out to over 2,50,000 companies.

FICCI provides a platform for networking and consensus building within and across sectors and is the first port of call for Indian industry, policy makers and the international business community.

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