

Republic of India

**Data Collection Study for the
Strengthening of Industrial
Competitiveness in North Eastern
Region of India**

Final Report

March 2022

The Japan International Cooperation Agency (JICA)

**Deloitte Tohmatsu Financial Advisory LLC
Deloitte Tohmatsu Venture Support Co., Ltd.**

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Abbreviation table

Abbreviation	Meaning
AAU	Assam Agricultural University
ABRY	Atmanirbhar Bharat Rozgar Yojana
AI	Artificial Intelligence
AIC-SMUTBI	Atal Incubation Centre Sikkim Manipal University Technology Business Incubation Foundation
AIDC	Assam Industrial Development Corporation
AIIDC	Assam Infrastructure Industrial Development Corporation
ANBA	Aatma Nirbhar Bharat Abhiyan program
BBST	Basic Business Skills Training
B to B	Business to Business
B to C	Business to Customer
B to G	Business to Government
BPL	Below Poverty Line
CAGR	Compound Annual Growth Rate
CII	Confederation of Indian Industry
CM	Chief Minister
CMSS	Chief Minister's Startup Scheme
COVID-19	Coronavirus Disease 2019
CSR	Corporate Social Responsibility
DBT	Department of Biotechnology
DIC	Department of Commerce and Industries
DIN	Director Identification Number
DLI	Disbursement Linked Indicators
DPIIT	Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry
DST	Department of Science and Technology
DTFA	Deloitte Tohmatsu Financial Advisory LLC
DTVS	Deloitte Tohmatsu Venture Support Co., Ltd
EA	Entrepreneurs Associates
EDC	Entrepreneurship Development Center
EFC	Enterprise Facilitation Center
EPF	Employee Provident Fund
ESDM	Electronics Systems and Design Manufacturing
ESS	Entrepreneurship Support Scheme
EU	European Union

Abbreviation	Meaning
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FICCI	The Federation of Indian Chambers of Commerce and Industry
FINER	The Federation of Industry and Commerce of North Eastern Region
FMCG	Fast Moving Consumer Goods
FOME	Feast of Merit Entrepreneurs
FY	Financial Year
GBS	Gross Budgetary Support
GDP	Gross Domestic Product
GNI	Gross National Income
GSDP	Gross State Domestic Product
GSVA	Gross State Value Added
GST	Goods and Services Tax
ICC	Indian Chamber of Commerce
ICCSPL	Innovative Change Collaborative Services Private Limited
ICFAI	The Institute of Chartered Financial Analysts of India
ICT	Information and Communication Technology
IDEAS	Indian Development and Economic Assistance Scheme
IESC	Incubation and Enterprise Support Centre
IHM	Indian Institute of Hotel Management
IIE	Indian Institute of Entrepreneurship
IIM	Indian Institute of Management
IIMS	Indian Institute of Management Shillong
IIM-CIP	IIM Calcutta Innovation Park
IITG	Indian Institute of Technology Guwahati
IITG-IIC	Indian Institute of Technology Guwahati Innovation Incubation Centre
INR	Indian Rupee
IoT	Internet of Things
IPR	Intellectual Property Rights
IRMA	Institute of Rural Management Anand
ISO	International Organization for Standardization
ISRO	Indian Space Research Organisation
IT	Information Technology
ITeS	Information Technology Enabled Services
ITI	Industrial Training Institute
JICA	The Japan International Cooperation Agency

Abbreviation	Meaning
JIT	Japan Industrial Township
KPI	Key Performance Indicator
KVIC	Khadi and Village Industries Commission
MDoNER	Ministry of Development of North Eastern Region
MEDMOC	Mizoram State Entrepreneurship Development and Monitoring Committee
MEPS	Meghalaya Entrepreneurship Promotion Strategy
MFI	Micro Finance Institution
MIE	Meghalaya Institute of Entrepreneurship
Mn	million
MoSPI	Ministry of Statistics and Programme Implementation
MoU	Memorandum of Understanding
MSDE	Ministry of Skill Development and Entrepreneurship
MSME	Micro, Small and Medium Enterprise
MSSDS	Meghalaya State Skills Development Society
MUDRA	Micro Units Development and Refinance Agency Limited
MZUBioNEST	Mizoram University Bio-Incubator Nurturing Entrepreneurship for Scaling Technology
NAAC	National Assessment and Accreditation Council
NBFCs	Non-Banking Financial Companies
NCR	National Capital Region
NDDB	National Dairy Development Board
NEAP	North East Accelerator Program
NEC	North Eastern Council
NEDC	Network of Entrepreneurship Development Centers
NEDFi	North Eastern Development Finance Corporation Ltd.
NEIDS	North East Industrial Development Scheme
NEIIPP	North East Industrial and Investment Promotion Policy
NER	North Eastern Region
NESIDS	North East Special Infrastructure Development Scheme
NEVF	North East Venture Fund
NFBC	Non-Banking Financial Companies
NGO	Non-Governmental Organization
NIRF	National Institutional Ranking Framework
NIT	The National Institute of Technology
NITI Aayog	The National Institution for Transforming India
NLCPR	Non-Lapsable Central Pool of Resources
NOC	No Objection Certificates

Abbreviation	Meaning
NSDA	National Skill Development Agency
NSDC	National Skill Development Corporation
NSDP	Net State Domestic Product
OBC	Other Backward Class
PM	Prime Minister
PMEGP	Prime Minister Employment Generation Program
PMF	Product Market Fit
PMKVY	The Pradhan Mantri Kaushal Vikas Yojana
PMU	Project Management Unit
PoC	Proof of Concept
PPP	Public Private Partnership
PRIME	Promotion and Incubation of Market-driven Enterprises
QMS	Quality Management System
PSU	Public Sector Undertakings
R&D	Research and Development
SANKALP	Skill Acquisition and Knowledge Awareness for Livelihood Promotion
SC	Scheduled Caste
SDGs	Sustainable Development Goals
SECC	Socio Economic Caste Census
SEED	Sikkim Entrepreneurship and Economic Development
SEP	Self-employment program
SHG	Self Help Group
SIDBI	Small Industries Development Bank of India
SSSBE	Small-Scale Service and Business Enterprises
ST	Scheduled Tribe
S-TIC	Space Technology Incubation Centre
STPI	Software Technology Parks of India
SU	Startup
SYSS	Skilled Youth Startup Scheme
TIC	Technology Incubation Centre
TIIPS	Tripura Industrial Investment Promotion Scheme 2017
TLO	Technology Licensing Office
TUEP	Tribal Urban Employment Program
UT	Union Territory
VC	Venture Capital

1. Background and objective

1.1. Background of the study

The North Eastern Region (NER) in India has once thrived as a center point for trade and retained geopolitical importance since then. It also has significant potential for industrial development endowed with abundant natural resources as well as market size underpinned by the high population growth and the supply of young human resources.

Nevertheless, major economic indicators show that the NER faces challenges in terms of economic development including infrastructure. In terms of industry, the productivity of agriculture, which is the largest industry in the region, has a room for improvement, and secondary and tertiary industries are also limited. Additionally, companies (MSMEs and startups) and entrepreneurs, who originally would be main sources of developing their industries, are inactive. This can be confirmed by statistics; one shows that the amount of Foreign Direct Investment (FDI) from 2000 to 2019 in Assam, which was the largest in the NER, was about one-thousandth of Maharashtra's; Another demonstrates that the number of local entrepreneurs and their employees in the NER was much lower than the average in India. As a result, young labor forces move to larger cities, such as Delhi, to seek for better employment opportunities.

The Government of India has placed great emphasis on the development of the region and taken measures to minimize the economic disparity with other states. Despite these efforts, it has yet to fully succeed in creating and developing companies inside the NER or attracting companies from outside.

1.2. Objective of the study

With the above background, the main objectives of this study are:

- To grasp the overall picture of the industry of the NER, including the efforts for industrial promotion by the Government of India as well as the state governments, challenges, strengths and potential;
- To explore the optimal approaches to improve the industrial competitiveness of the NER, which will be the foundation for the economic growth of the region, and identify the roles of JICA as well as assistance to be provided; and
- To verify the possibility of creating an environment in which entrepreneurs as well as new companies emerge one after another and to which companies from outside the region are attracted

1.3. Three hypotheses for the industrial competitiveness in the NER

In terms of grasping the overall picture of the industry in the NER, three hypotheses on factors hindering economic development of the NER are to be verified in the study.

- Hypothesis 1: The NER states depend on agriculture with low productivity while there are few private companies leading industries in this region: that is, business activities in this region are inactive.

- Hypothesis 2: The absence of groups of companies leading industries results in limited employment opportunities in the NER states.
- Hypothesis 3: As a result of Hypothesis 1 and 2, the NER states underutilize abundant young labor force although it is one of the strong points of them, which hinders investments from inside and outside this region.

Both desktop research and interviews with stakeholders were conducted to verify these hypotheses.

2. Current status of the NER

2.1. General information about the NER

2.1.1. Size of Land

The area of the NER excluding Arunachal Pradesh is 178,436 square kilometers, which accounts for 5.4% of India's entire area.¹

State Name	Area (Sq. Km.)	Percentage Share
Assam	78,438	2.4%
Manipur	22,327	0.7%
Meghalaya	22,429	0.7%
Mizoram	21,081	0.6%
Nagaland	16,579	0.5%
Sikkim	7,096	0.2%
Tripura	10,486	0.3%
NER without Arunachal Pradesh	178,436	5.4%
All India	3,287,469	100%

Table 1: State-wise Area

Among the seven states, Assam is the largest in terms of area, accounting for more than 40% of them and each of the rest of six states accounting for up to 13% of the total area as shown in the following figure.²

¹ <https://mdoner.gov.in/dashboard/pages/nerfacts.php?page=3>

² <http://necouncil.gov.in/sites/default/files/uploadfiles/BasicStatistic2015-min.pdf>

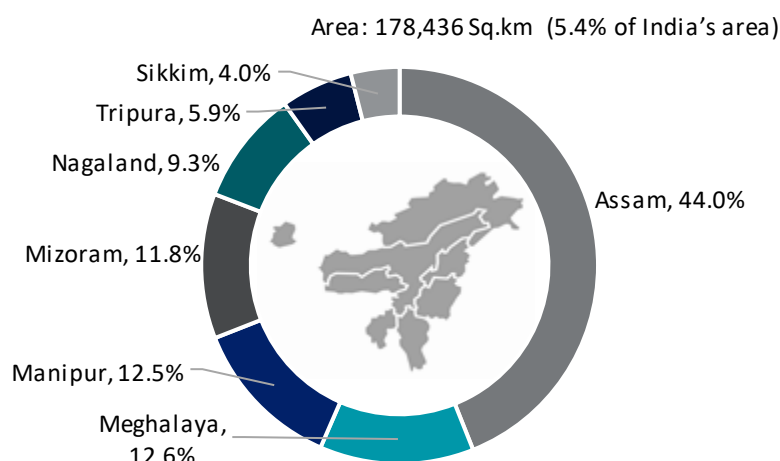


Figure 1: Share of area in NER by state

Most of the overall area in the NER is categorized as rural area with the percentage of urban area being less than 4% in each state, as shown in the following table.:³

State	Percentage of urban area
Tripura	3.7%
Mizoram	2.8%
Assam	1.6%
Nagaland	1.5%
Meghalaya	1.3%
Manipur	0.8%
Sikkim	0.5%
All India	3.1%

Table 2: Percentage of urban area in NER (2011)

Note: The Census of India 2011 defines the term of “urban area” as follows:⁴

1. All places with a municipality, corporation, cantonment board or notified town area committee, etc.
2. All other places which satisfied the following criteria:
 - i) A minimum population of 5,000;
 - ii) At least 75 percent of the male main working population engaged in non-agricultural pursuits; and
 - iii) A density of population of at least 400 persons per sq. km.

2.1.1.1. Climate

Climate in the NER is largely humid sub-tropical with hot and humid summers, mild winters, and severe monsoons. Factors such as varied amount of rainfall and differences in altitudes among the NER states give rise to varied climate types.⁵

³ https://censusindia.gov.in/2011census/population_enumeration.html

⁴ https://censusindia.gov.in/2011-prov-results/paper2/data_files/India2/1.%20Data%20Highlight.pdf

⁵ https://mdoner.gov.in/contentimages/files/Project_Document_NECCAP-31052011.pdf

The region has a diverse temperature range, varying between 15 to 32 degrees Celsius in the summer and between 0 to 26 degrees Celsius in the winter. While Sikkim has a montane climate with mild summers and snowy winters, the other states in the NER predominantly have a sub-tropical climate with mild winters.

Annual rainfall in the NER is primarily from the southwest monsoon, lasting from around the middle of May up to October, varying between high rainfall in states such as Meghalaya (up to 12,000 mm) and very low rainfall in states such as Assam (up to 1,000 mm). The NER, on an average receives approximately 2,450 mm of rainfall annually.

2.1.1.2. Population

Assam and Tripura account for approximately 80% of the population in the NER excluding Arunachal Pradesh. The two states also have the highest population density in the region with more than 400 persons per Sq.km, while the other states have a population density ranging from 59 to 150.

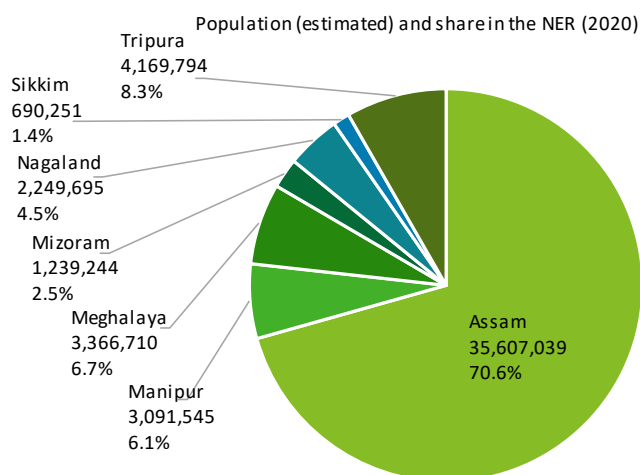


Figure 2: Population in the NER (estimated figure) and share in the NER (2020) ⁶

2.1.1.3. Ethnic distribution

The NER has intricate cultural and ethnic mosaic with over 200 ethnic groups with their own languages and socio-cultural identity.⁷ Mizoram, Nagaland and Meghalaya are predominantly tribal states where the Scheduled Tribes (STs) population constitutes more than 80% of their total population.⁸

⁶ <https://uidai.gov.in/images/state-wise-aadhaar-saturation.pdf>

⁷ http://necouncil.gov.in/sites/default/files/about-us/Vision_2020.pdf

⁸ <http://socialjustice.nic.in/writereaddata/UploadFile/HANDBOOKSocialWelfareStatistic2018.pdf>

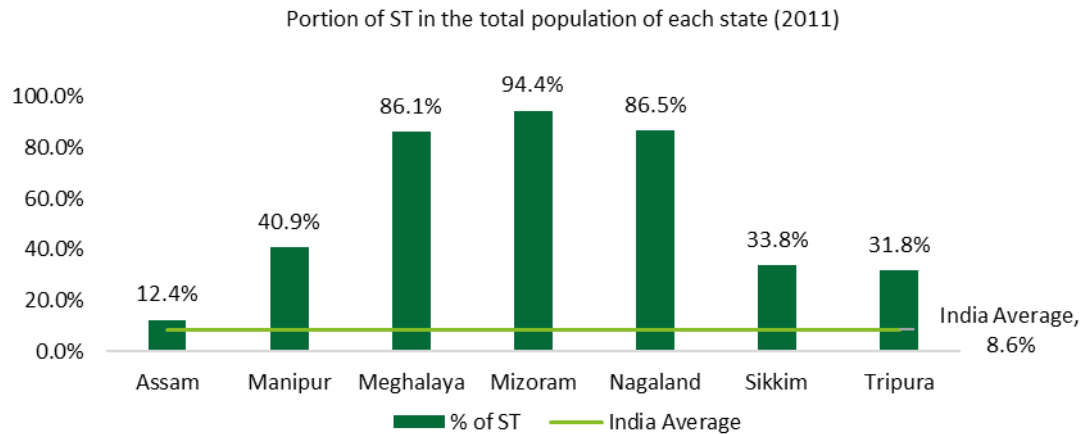


Table 3: Portion of ST in the total population of each state (2011)

2.1.2. Socio-Economic Indicators

2.1.2.1. NER-GDP

State-wise contribution to the overall NER GDP has remained largely consistent since 2014 with Assam accounting for approximately 62% of the GDP, followed by Tripura accounting for approximately 10% of the GDP.⁹ Mizoram has consistently been the lowest contributor to the GDP with approximately 4% share since 2014.

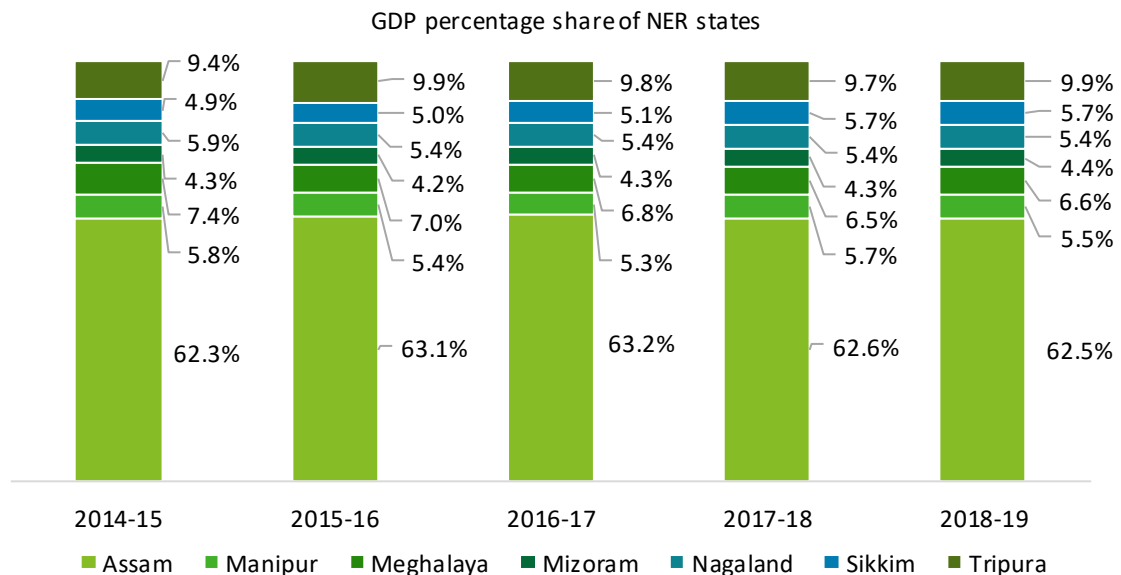


Figure 3: GDP percentage share of the NER states (2014-19)

2.1.2.2. Income Level

⁹ "GSVA/NSVA by economic activities", Ministry of Statistics and Programme Implementation, <http://www.mospi.nic.in/GSVA-NSVA>

Except for Sikkim, the per capita Net State Domestic Product (NSDP) of the NER states are much below India average.¹⁰ This trend has been constant since 2011. Sikkim marks second highest per capita NSDP in Indian states and union territories after Goa, which is attributable to developments in pharmaceutical sector.

State	Per Capita NSDP (unit: INR)
Sikkim	380,926
Mizoram	147,602
Nagaland	116,882
Tripura	112,849
Meghalaya	84,725
Assam	82,837
Manipur	75,226
India Average	167,339

Table 4: Per capita NSDP (Net State Domestic Product) (2018-19)

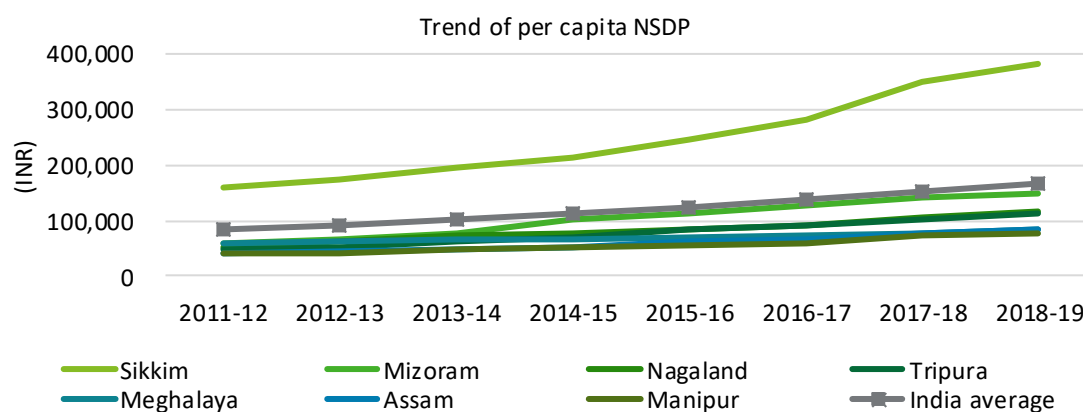


Figure 4: Trend of per capita NSDP (2011-19)

Note: Since the per capita NSDP of Andaman and Nicobar Islands for 2018-19 is not available, calculation of average uses the same for 2017-18.

2.1.2.3. Literacy Rate

The NER with an average literacy rate of 78.5% is above the national average of 73%, with Mizoram having the highest number of literates as shown in the following figure.¹¹

¹⁰ <https://m.rbi.org.in/Scripts/PublicationsView.aspx?id=20004>

¹¹ <https://mdoner.gov.in/dashboard/pages/nerfacts.php?page=3>

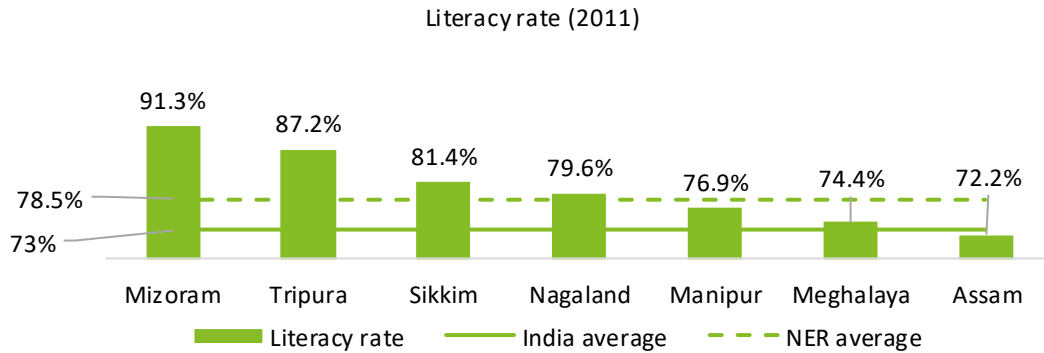


Figure 5: Literacy rate of the NEER states (2011)

There are around 1.07 Lakh schools (as of 2015-16), 906 colleges and 67 universities (as of 2018-19) with more than 65% of the educational institutions being in Assam.¹² Assam and Meghalaya have the highest number of schools in the NEER, with approximately 66% and 14% respectively. They also have the highest number of universities with approximately 33% and 15% respectively. Assam and Manipur have the highest number of colleges in the NEER with more than 60% and 10% respectively.

2.1.2.4. Drop-out rate

The average state-wise drop-out rate in the NEER is approximately 12-13%, which is almost double of the same of the all India average.¹³ Nagaland and Sikkim record the highest drop-out rate for primary level and higher secondary level respectively.

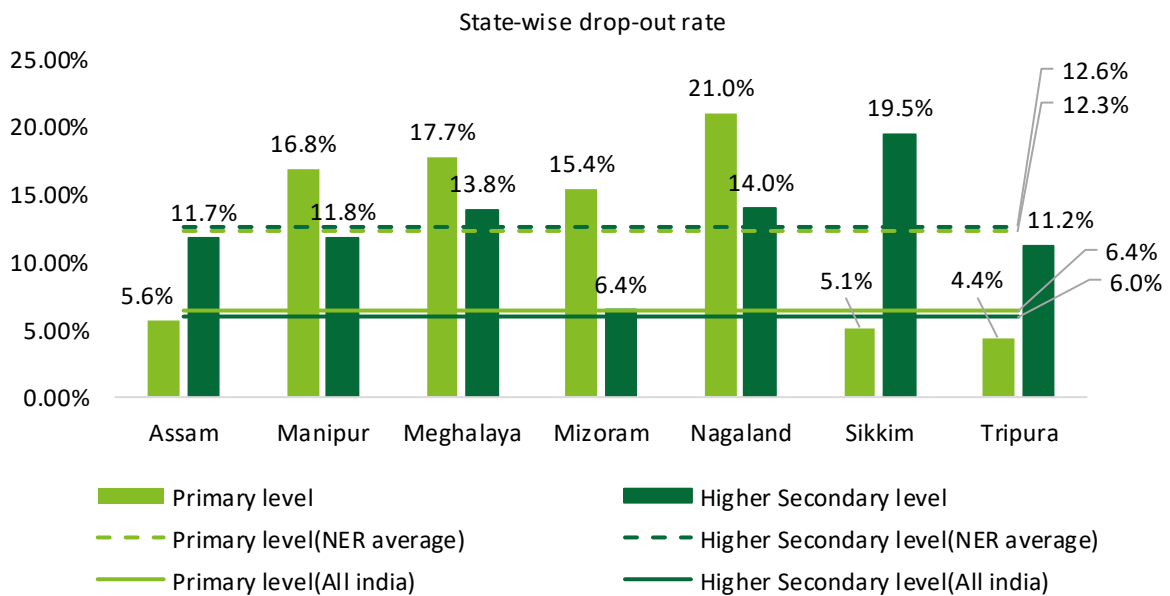


Figure 6: State-wise drop-out rate in the NEER (2016-17)

12 <https://mdoner.gov.in/dashboard/pages/nerfacts.php?page=3>

13 <https://mdoner.gov.in/dashboard/pages/nerfacts.php?page=3>

2.1.2.5. Unemployment Rate

The unemployment rate in the NER with an average of 9.1% was above the national average of 6.5% as of 2017-18.¹⁴

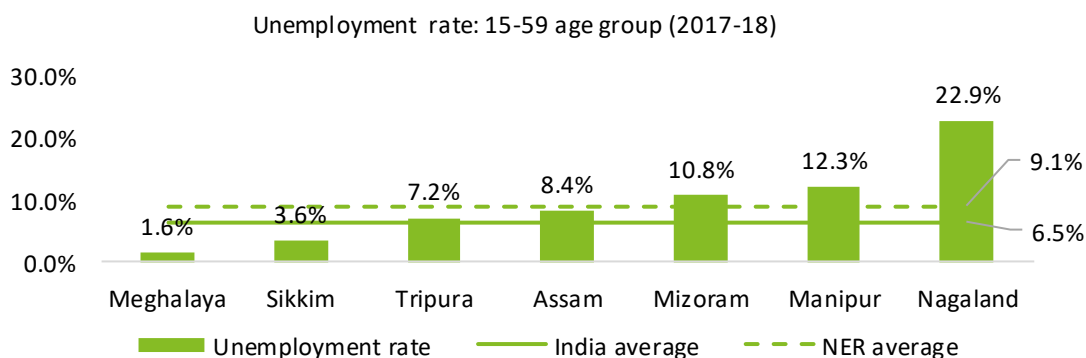


Figure 7: Unemployment rate: 15-59 age group (2017-18)

Note1: NER Average includes the figure of Arunachal Pradesh in its calculation.

Note2: The original data source of unemployment rate is “Annual Report Periodic Labour Force Survey (PLFS) July 2017 – June 2018” issued by National Statistical Office in May 2019.¹⁵ The report defines unemployment rate as “the percentage of persons unemployed among the persons in the labour force” and calculated by the following formula:

number of unemployed persons/ (number of employed persons + number of unemployed persons) *100

Urban average unemployment rate (10.9%) in the region was found to be higher than the rural unemployment rate (8.3%). Only in the states of Assam and Nagaland, the rural unemployment rate was found to be higher than the urban unemployment rate.

While most of the states had minimal differences between urban and rural unemployment rates (ranging between 0.2% and 3.1%), Mizoram and Meghalaya had much higher urban unemployment rates as compared to rural (difference of over 6%).

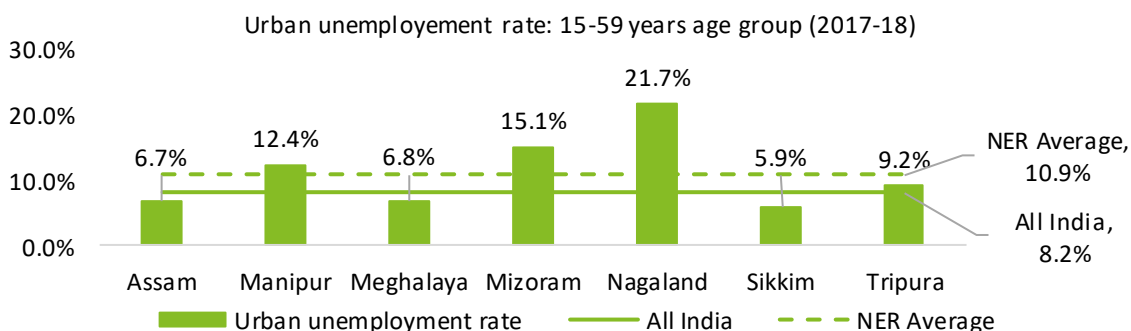


Figure 8: Urban unemployment rate: 15-59 age group (2017-18)

14 <https://mdoner.gov.in/contentimages/files/English-Ministry%20of%20Development%20of%20North%20Eastern%20Annual%20Report%202019-2020.pdf>

15 <http://www.indiaenvironmentportal.org.in/files/file/Annual%20Report,%20PLFS%202017.pdf>

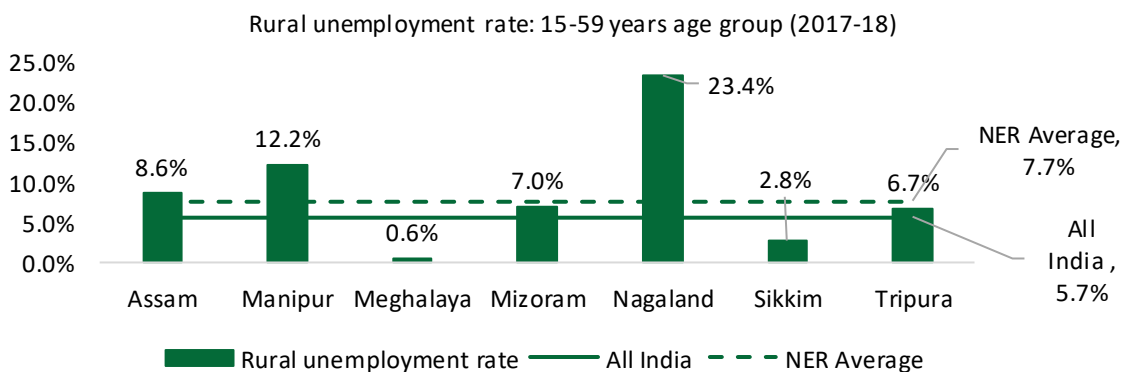


Figure 9: Rural unemployment rate: 15-59 age group (2017-18)

Nagaland had the highest unemployment rate among other states both for urban, rural and total. The Government of Nagaland once conducted a study in 2007, titled “Employment opportunities forgone by Nagas and employment of Non-Nagas in the State”.¹⁶ The report attributed the high unemployment rate among educated in the state to a strong preference among Naga people for certain special courses in education (such as medical and engineering), aspiration for white collared jobs, lack of dignity of labor, preference for government job etc. As a result, labor-intensive sector including construction sector relies on non-Naga workers.

2.1.2.6. NER Healthcare

As for the birth rate, it was higher in Meghalaya and Assam than in India as a whole.¹⁷ As for the mortality rate, on the other hand, it is lower than the Indian average in all states except Assam..¹⁸ The high mortality rate in Assam may be attributed to the high infant mortality rate mentioned in 2.1.2.8.

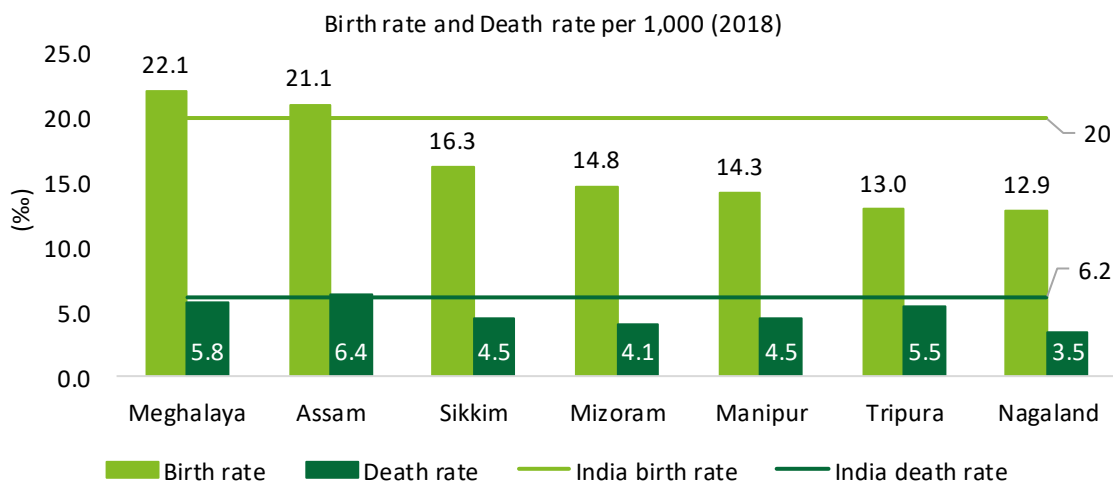


Figure 10: Birth rate and death rate per 1,000 (2018)

16 <http://14.139.60.153/bitstream/123456789/9524/1/Pub52.pdf>
 17 <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=19997>
 18 <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=19997>

2.1.2.7. Healthcare infrastructure

As of 2019, the NER (excluding Arunachal Pradesh) has a total of 6,789 sub-centers, 1,206 primary health centers, and 284 community health centers. Approximately 60% of the centers in each category is located in Assam and approximately 13% in Tripura. Sikkim has the lowest number of health care centers, with approximately 2% overall.¹⁹

Health sub-center is the most peripheral and first point of contact between the primary health care system and the community. A sub-center provides all the primary health care services to the community at the grass-root level. The purpose of the health sub-center is largely preventive and promotive, but it also provides a basic level of curative care.²⁰

Primary health center is the cornerstone of rural health services, which is a first port of call to a qualified doctor of the public sector in rural areas for the sick and those who directly report or referred from sub-centers for curative, preventive and promotive health care.²¹

The Community health centers constitute the secondary level of health care, designed to provide referral as well as specialist health care to the rural population.²²

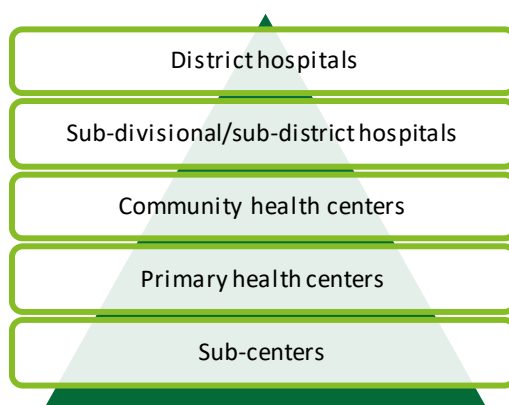


Figure 11: Health care facilities in India

2.1.2.8. Infant mortality rate

The infant mortality rate in Assam is in excess of India's national average at 9%, while other states are at or below the national average.²³ Considering that the population of Assam accounts for more than 70% of the total population of the NER, this is an area that needs particular improvement.

19 <https://mdoner.gov.in/dashboard/pages/nerfacts.php?page=3>

20 <http://nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidlines-2012/sub-centers.pdf>

21 <http://nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidlines-2012/primay-health-centres.pdf>

22 <http://nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidlines-2012/community-health-centres.pdf>

23 <https://www.rbi.org.in/Scripts/PublicationsView.aspx?id=19999>

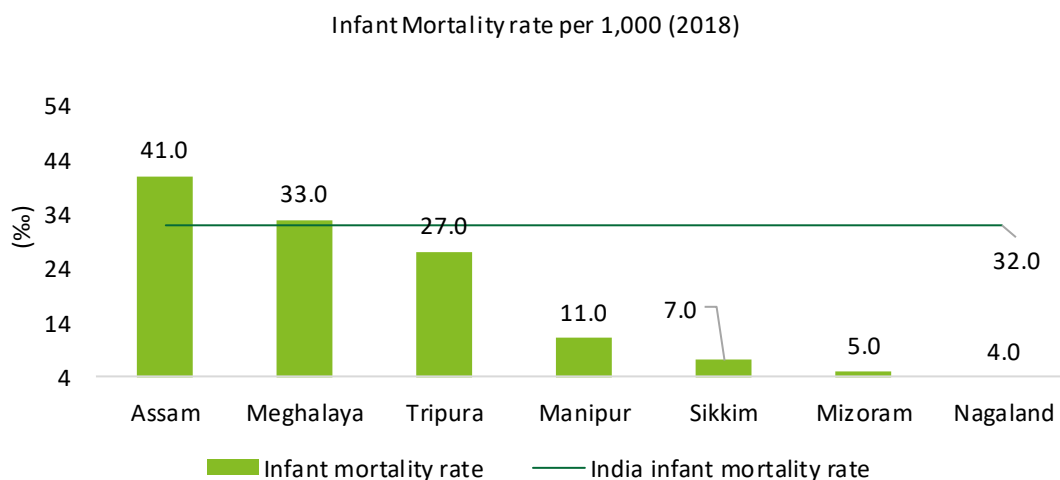


Figure 12: Infant Mortality rate per 1,000 (2018)

2.1.3. Industrial promotion in the NER

2.1.3.1. Implementation structure of development of the NER

MDoNER is in charge of the development of the NER and functions as a coordinator among stakeholders. DPIIT is responsible for industrial policies at a central level.

(A) Ministry of Development of North Eastern Region (MDoNER)

The Ministry of Development of North Eastern Region (MDoNER) was established in 2001, primarily to coordinate development efforts in the NER for the eight north eastern states. This department was converted to a full-fledged ministry in 2004.²⁴

MDoNER is responsible for formulation, implementation, and supervision of development schemes and projects of the NER (including sectors such as power, roads, irrigation, and communications).

The ministry functions as a facilitator between the central ministries and state governments of the NER to remove infrastructural bottlenecks and in creating a favorable environment for private sector investments. The ministry handles the Non-Lapsable Central Pool of Resources (NLCPR) and coordinates with the state governments and the Government of India for development of the NER.

The North Eastern Council (NEC)

The North Eastern Council (NEC) is a statutory regional planning body, under the administrative control of MDoNER.²⁵ The council provides financial assistance for

²⁴ https://mdoner.gov.in/contentimages/files/Annual_Report_2021-22.pdf

²⁵ [https://mdoner.gov.in/contentimages/files/English-](https://mdoner.gov.in/contentimages/files/English-Ministry%20of%20Development%20of%20North%20Eastern%20Annual%20Report%202019-2020.pdf)

[Ministry%20of%20Development%20of%20North%20Eastern%20Annual%20Report%202019-2020.pdf](https://mdoner.gov.in/contentimages/files/English-Ministry%20of%20Development%20of%20North%20Eastern%20Annual%20Report%202019-2020.pdf)

infrastructure projects via the state governments.²⁶ NEC receives funding from the Government of India wherein NEC and MDoNER share the same budget.

(B) Department for Promotion of Industry and Internal Trade (DPIIT)

The Department for Promotion of Industry and Internal Trade (DPIIT) was established in 1995 and is responsible for framing and supervising industrial policies in India at the central level.

DPIIT is tasked to ensure productivity in the Indian industries, facilitate ease of business, promotion of internal trade, and undertake administration of industries.

DPIIT has been granted the authority to issue industrial licenses and monitors industrial activity, production, and prices. In 2018, DPIIT was also given charge for matters related to e-commerce. It is responsible for protection of intellectual property rights related to patents, copyrights, and trademarks. In 2019, DPIIT was given charge of matters related to welfare of traders, startups, and their employees.²⁷

The department is responsible for formulation and supervision of Foreign Direct Investment (FDI) policies. After the elimination of the erstwhile Foreign Investment Promotion Board, applications related to FDI are now handled by respective Ministries. However, DPIIT acts as a single point interface to facilitate FDI approvals. DPIIT has established a portal for ease of administration and facilitate a single window approval process.

Invest India

Invest India, set up in 2009, is a non-profit venture under DPIIT. It is the National Investment Promotion and Facilitation Agency of India and act as the first point of reference for investors in India.²⁸

Invest India focuses on sector-specific investor targeting and development of new partnerships to enable sustainable investments in India. In addition to a core team that focuses on sustainable investments, it partners with a variety of investment promotion agencies and multilateral organizations. It also works with several Indian states to build capacity as well as bring in global best practices in investment targeting, promotion and facilitation areas.

According to the interview with the Invest India, this institution has conducted a market study to identify the enabling factors and challenges for the planned initiative of setting up Japanese Industrial Townships (JITs) in the NER. They observed that the lack of presence of suppliers and clients in the NER was a challenge which might lead to difficulty in establishing a supply chain for the Japanese players.

2.1.3.2. Fund flow from the Government of India to each state government in the NER

²⁶ <http://necouncil.gov.in/>

²⁷ <https://dipp.gov.in/about-us/role-and-functions-department-promotion-industry-and-internal-trade>

²⁸ <https://www.investindia.gov.in/about-us>

(B) Gross Budgetary Support (GBS) Scheme

In the Gross Budgetary Support (GBS) Scheme, Central Ministries/Departments in general earmark at least 10% of their gross plan budgets for the NER.²⁹ The scheme of Non-Lapsable Central Pool of Resources (NLCPR) provides gap funding for creation of infrastructure in the NER states. The NLCPR Scheme has been re-structured as North East Special Infrastructure Development Scheme (NESIDS) to meet the gaps in social and physical infrastructure in the region.³⁰

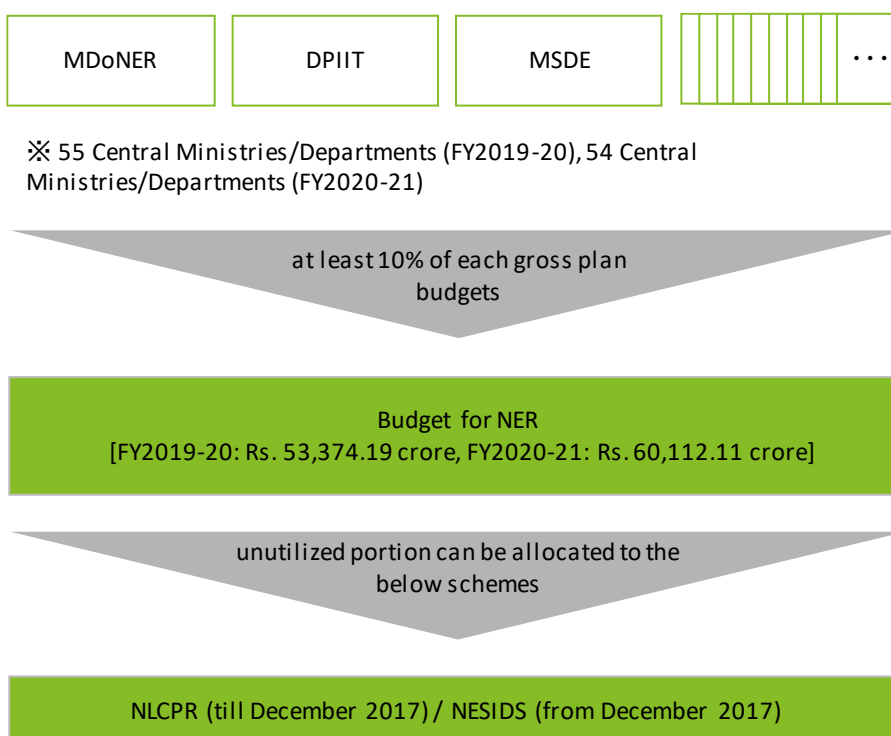


Figure 13: Gross Budgetary Support Scheme

(C) Expenditure under 10% GBS scheme

The main Ministries/Departments spent under the GBS scheme for the year 2019-20 relates to fields of education, health, infrastructure and agriculture.³¹

Ministry/Department	Expenditure (in Crores)
Rural Development	4,316.36
School Education and Literacy	3,833.27
Agriculture, Cooperation and Farmers Welfare	3,236.18
Health and Family Welfare	3,181.16

²⁹ <https://mdoner.gov.in/contentimages/files/English-Ministry%20of%20Development%20of%20North%20Eastern%20Annual%20Report%202019-2020.pdf>

³⁰ <https://mdoner.gov.in/contentimages/files/English-Ministry%20of%20Development%20of%20North%20Eastern%20Annual%20Report%202019-2020.pdf>

³¹ <https://mdoner.gov.in/contentimages/files/English-Ministry%20of%20Development%20of%20North%20Eastern%20Annual%20Report%202019-2020.pdf>

Women and Child Development	1,640.59
Power	1,588.11
Higher Education	1,489.95
Road Transport and Highways	1,335.82
Development of North Eastern Region	1,193.23

Table 5: Main Ministry/Department Expenditure (over 1,000 Crores) in the NER under 10% GBS for the Year 2019-20 (up to 31.12.2019)

Note: Although the budgets for “Drinking Water and Sanitation” and “Telecommunications” were over 1,000 Crores, expenditure for those departments had not yet been calculated by 31.12.2019.

2.1.3.3. Regional Plan and Key Industrial Policy/Scheme

(A) Regional Plan

NEC sets out the long-term vision and mid-term plan including sector-wise policy.³² The long-term vision is “North Eastern Region Vision 2020” and the mid-term one is “NEC Regional Plan.” According to the interview with NEC, it does not have a plan to revise or update the vision/plan as of March 2021.

North Eastern Region Vision 2020
<ul style="list-style-type: none"> • The North Eastern Region Vision 2020 which was set out by North Eastern Council (NEC) in 2008 is the long term vision for the NER. • The vision is mainly comprised “Peace and Prosperity for the people” and “Realizing the Vision: The New Development Strategy.” • Action areas suggested by the 17 thematic groups were referred for implementation by the concerned Ministries.
NEC Regional Plan (2017-18 to 2019-20)
<ul style="list-style-type: none"> • This plan details the sectoral budget allocation for the entire region for 3-5 years. • In terms of sectors to be focused on, the plan is to promote tourism as a potential growth driver in relation to infrastructure development. In terms of non-infrastructure sectors, it states the emphasis on the agricultural sector is needed to reduce the gap with other regions.

Figure 14: Long-term and Mid-term vision of the NER

(B) The North East Industrial Development Scheme (NEIDS) (2017-2022)

The North East Industrial Development Scheme (NEIDS) was launched in 2017 to boost industrial development in the NER states and provides support in terms of capital, credit, tax exemptions, and employment incentives.³³

The scheme was announced by DPIIT to catalyze industrial development in the NER. A primary objective of the scheme is to promote employment in the NER by focusing on the

³² <http://necouncil.gov.in/about-us/nec-vision-2020-0>, <http://necouncil.gov.in/about-us/nec-regional-plan-0>

³³ <https://dipp.gov.in/whats-new/north-east-industrial-development-scheme-neids-2017>

MSME sector. However, apart from MSMEs, other industrial units are also to be considered for availing benefits under this scheme.

The total outlay approved for the NEIDS scheme was INR 30 billion up to 2020, and the Government of India is to provide allocations for the remaining period of the scheme post assessment in 2020.³⁴

Name of subsidy	Description	Eligibility
Scheme total cap	<ul style="list-style-type: none"> Overall cap of benefits under all categories is up to INR 2 billion per unit 	<ul style="list-style-type: none"> Industrial units located in the NER Preference for MSMEs
Access to credit	<ul style="list-style-type: none"> 30% of investment in plant/machinery (upper limit of INR 50 million) 	<ul style="list-style-type: none"> To be submitted within one year of start of commercial operations
Employment	<ul style="list-style-type: none"> 3.67% of the employer's contribution will be paid by the DPIIT to the employees' provident fund. This is in addition to the 8.33% borne by the Government of India by the Pradhan Mantri Rojgar Protsahan Yojana scheme 	<ul style="list-style-type: none"> Industrial units located in the NER
Interest	<ul style="list-style-type: none"> 3% of working capital credit, capped at 25% of annual turnover 	<ul style="list-style-type: none"> New Industrial Units with maximum of 5 years of commercial operations
Insurance	<ul style="list-style-type: none"> Reimbursement of 100% of insurance premium (buildings and machinery) 	
GST and income tax	<ul style="list-style-type: none"> Reimbursement of Goods and Services Tax (GST) up to the extent of the share of the Government of India 	
Transport	<ul style="list-style-type: none"> Reimbursement of a proportion of the cost incurred for transport of finished goods (33% for air freight and 20% for air/rail) 	

Table 6: North East Industrial Development Scheme (2017-22)

(C) North East Industrial and Investment Promotion Policy (NEIIPP), 2007

Though the NEIDS has replaced the North East Industrial and Investment Promotion Policy (NEIIPP), businesses which commenced production during 2007-2017 can claim incentives under this scheme for a period of ten years.³⁵

The scheme was launched by DPIIT to promote industrialization and investments in the NER states. All industrial units, both existing and new units located in the NER are eligible under this scheme with the exception of sectors such as tobacco, pan masala, refinery products, and plastic carry bags less than 20 microns.

³⁴ <https://meghalaya.gov.in/schemes/content/37478>

³⁵ <https://dipp.gov.in/policies-and-schemes/north-east-industrial-and-investment-promotion-policy-neiipp-2007>

Since the inception of the scheme in 2007, a total of INR 3,036 Crores has been disbursed to the NER states. INR 583 Crores was released during the FY 2019-20 to the NER states and a provision of INR 200 Crores has been made for the current FY2020-21.

Name of subsidy	Description	Eligibility
Capital investment	<ul style="list-style-type: none"> 30% of value of plant and machinery with no upper ceiling for ten years from the date of commercial production 	<ul style="list-style-type: none"> Industrial Units with maximum of 10 years of commercial operations (must have commenced operations during 2007-2017)
Interest	<ul style="list-style-type: none"> Subsidy of 3% on working capital loan for ten years from the date of commercial production 	
Insurance	<ul style="list-style-type: none"> Reimbursement of 100% of insurance premium 	
Excise duty	<ul style="list-style-type: none"> Central excise duty exemption based on norms specified by the Department of Revenue 	
Income tax	<ul style="list-style-type: none"> 100% income tax exemption 	

Table 7: North East Industrial and Investment Promotion Policy (2007)

(D) Make in India

Make in India is an initiative of the Government of India to promote investments in the manufacturing sector in India. The initiative aims to enhance the business environment in India in terms of infrastructure, ease of doing business, and to liberalize sectors for foreign investments.³⁶

The three main objectives of the initiative are:

- To increase the growth rate of the manufacturing sector to 12%-14% annually.
- To create 100 million additional jobs in the manufacturing sector by 2022.
- To increase the contribution of the manufacturing sector to the GDP to 25% by 2022.

With initiatives like Make in India, the Government of India launched the PM Formalization of Micro Food Processing Enterprises (PM FME) Scheme with an outlay of INR 10,000 Crores in June 2020.³⁷ According to the interviews, some of the state governments, such as Assam, Sikkim and Tripura, utilize this scheme to support the unorganized micro food processing units in their states.

In November 2020, the Government of India announced production-linked incentives for 10 sectors such as electronic products, automobiles, food products, and specialty steel.³⁸

The incentives offered for manufacturing under the scheme include the Area-based incentives: Incentives are provided for units in special economic zones as per respective

36 <https://www.india.gov.in/spotlight/business-opportunity-all-investors-0/>

37 <https://www.makeinindia.com/pm-formalization-micro-food-processing-enterprises-scheme>

38 <https://www.ibef.org/blogs/india-to-offer-production-linked-incentives-to-boost-manufacturing>

acts and for special areas such as the NER, Jammu and Kashmir, Himachal Pradesh, and Uttarakhand.

2.1.3.4. Features of Industrial Policies/Schemes of the NER states

Most of the states focus on promoting the development of MSME and facilitating entrepreneurship in each industrial policy in line with the policies by the Government of India.

State	Key policy/scheme	Outline
Assam	Industrial and Investment Policy of Assam, 2019 ³⁹	<ul style="list-style-type: none"> The objective is to promote sustainable eco-friendly investments and to promote Assam as a preferred destination for investment for the next five years. The policy is applicable only for new industrial units established during this period
Manipur	Industrial and Investment Policy of Manipur, 2017 ⁴⁰	<ul style="list-style-type: none"> The policy framework focuses on encouraging private sector investments through PPP mode and aims to incentivize players across the industry through creating MSME clusters and facilitate entrepreneurship
Meghalaya	Meghalaya Industrial and Investment Promotion Policy (2012-2022) ⁴¹	<ul style="list-style-type: none"> The objectives include special incentives for promoting local entrepreneurs in setting up of micro, small and medium manufacturing and service enterprises
Mizoram	The Mizoram Industrial Policy 2012 ⁴²	<ul style="list-style-type: none"> The mission of this policy is to accelerate industrial development in Mizoram by maximizing investment, output, growth, employment and competitiveness Key strategies include providing capital subsidy to MSME and eco-friendly technologies
Nagaland	State Industrial Policy-2000 (Revised-2004) ⁴³	<ul style="list-style-type: none"> Key objectives include developing village and small-scale Service and Business Enterprises (SSSBE) to provide self-employment to unemployed youth
Sikkim	New Industrial Policy, 2003 ⁴⁴	<ul style="list-style-type: none"> The policy was later discontinued in 2007, when the North East Industrial and Investment Promotion Policy (NEIIPP) 2007 came into being and the central policy is applicable for the sector
Tripura	Tripura Industrial Investment Promotion Scheme 2017 (TIIPS) ⁴⁵	<ul style="list-style-type: none"> The applicability of this scheme is limited to MSME The scheme provides capital investment, industrial promotion and employment cost subsidy to the industries

39 https://industries.assam.gov.in/sites/default/files/swf_utility_folder/departments/industries_com_oid_4/portlet/level_2/final_industrial_and_investment_policy_of_assam_2019.pdf

40 <https://dcimanipur.gov.in/MSME/Industrial%20&%20Investment%20Policy%20of%20Manipu-2017.pdf>

41 http://megindustry.gov.in/policy/miipp_2012.pdf

42 <https://industries.mizoram.gov.in/uploads/attachments/2a45eb76baee8e3dcb9dc0b244842613/pages-74-the-mizoram-industrial-policy-2012-pdf.pdf>

43 https://investuttarakhand.com/themes/backend/acts/act_english1575368265.pdf

44 http://www.fisme.org.in/export_schemes/DOCS/C-2/Sikkim.pdf

45 <https://industries.tripura.gov.in/state-scheme-details>

Table 8: Features of Industrial Policies/Schemes of the NER states

2.1.3.5. Challenges for industrial promotion in the NER

The policies/schemes explained in the previous sections are deemed to have encouraged major companies to extend their operation into the NER. For example, the Government of Sikkim succeeded in inviting pharmaceutical companies by leveraging the NEIIPP, as demonstrated in the section 2.1.5.1.

However, through interview, there are still remaining obstacles which prevent leading companies from investing in the NER. The followings are typical example of challenges:

- **Connectivity:**
Although a number of projects led by the Government of India including the NESIDS has been conducted, the connectivity of the NER is still a bottleneck for business.

Difficulty in accessing other states, which should be the primary market, while the market within the NER is limited in size

High transportation costs increase the cost of procuring raw materials, which leads to hinder competitiveness.
- **Internet connectivity:**
The slow, limited and unstable internet connectivity also hinders investment of companies in the NER.
- **Legal system and other business environment issues:**
According to the legal system on land, land ownership is restricted to indigenous people only except in the states of Assam and Tripura, making it difficult in reality to purchase land. As a result, companies are unable to use land as collateral for finance, preventing companies from obtaining loans. Complicated procedures for starting business are also an issue, and there is a need to centralize inquiry desks.
- **Lack of funding:**
Lack of risk money from venture capitals (VCs) and other sources, especially for SUs in seed stage
Limited support through the state government and public financial institutions (North Eastern Development Finance Corporation Limited (NEDFi), etc.)
- **Lack of support for entrepreneurial talent and entrepreneurs:**
Although efforts are being made to stimulate a culture of entrepreneurship, the number of people who actually start their own businesses is limited at present
Lack of effective technical support for startups and entrepreneurs

2.1.4. Policies and schemes to address the negative impact of COVID-19

The rapid spread of COVID-19 brought about serious negative impacts to the economy of the NER. Every sector in the region has been affected, especially due to lockdown measures.

For example, disruption of supply chains led to shortages in agricultural inputs including fertilizers, hybrid seeds and feed for silkworms, resulting in a steep decline of agricultural production. The halted access to markets also led to plummet of the sales of agricultural products. Tourism sector in every state was also devastated by the travel restriction.

In addition to the impact to the industries, the NER faced a surge of returning migrants to the region due to lay-offs and job losses, which converted into additional strain on available financial resources of the states. The majority of those were blue collar workers. Only few were white collar.

The Government of India and the state governments have therefore been focusing on creating employment opportunities for migrants. While NGOs do not have major specific program for returning migrants, their capacity building programs for employment served to mitigate the impact.

2.1.4.1. Aatma Nirbhar Bharat Abhiyan program (ANBA)

Aatma Nirbhar Bharat Abhiyan program (ANBA), or translated to “Self-Reliant India Mission”, is the primary policy launched by the Government of India in May 2020 to aid businesses and individuals in mitigating the impact of COVID-19.⁴⁶

The scheme was launched in 2020 to disburse economic packages (worth 10% of India’s GDP), owing to the COVID-19 pandemic and to boost private sector participation. The key financial highlights for businesses under this scheme include collateral free loans, equity infusion through MSMEs fund of fund, subordinate debt for MSMEs, schemes for Non-Banking Financial Companies (NBFCs), and government contribution to Employee Provident Fund (EPF).

Phase III of the scheme was announced in November 2020 for a stimulus worth INR 2.65 Lakh Crores. The three phases of the initiative are worth a total value of INR 29.8 Lakh Crore in economic packages.

- **Employment:**
A new scheme named “Atmanirbhar Bharat Rozgar Yojana” (ABRY) or translated to “Self-Reliant Employment Scheme”, was launched to promote creation of employment opportunities.⁴⁷ The Government of India will provide subsidies for wages for two years, the contribution depending on the size of the company.
- **Emergency Credit Line Guarantee Scheme 2.0:**
The scheme announced as part of the initial phase has been extended up to March 2021. The scheme offers support for stressed sectors via 100% collateral-free credit. The tenor of additional credit under this scheme is to be five years with one-year moratorium for principal payment. This is expected to benefit the MSMEs in particular.
- **Production-linked incentives for ten sectors:**
Production-linked incentives worth INR 1.46 Lakh Crores have been announced for 10 sectors including advance cell chemistry, electronic/technology products,

46 <https://www.investindia.gov.in/atmanirbhar-bharat-abhiyaan>

47 <https://pib.gov.in/Pressreleaseshare.aspx?PRID=1679337>

automobiles, pharmaceutical drugs, telecom, textile, food products, high-efficiency solar PV modules, white goods, and specialty steel.

- **Construction and infrastructure:**
Performance security on contracts is to be reduced to 3% from 5%-10%.
- **Support for agriculture:**
The Government of India is to provide INR 65,000 Crores for subsidized fertilizers.
- **Boost for exports:**
The Exim bank is to extend Lines of Credit under the Indian Development and Economic Assistance Scheme (IDEAS). An outlay of INR 3,000 Crores is to be released to the bank to promote exports in the country.
- **Capital and industrial stimulus:**
An outlay of additional INR 10,000 Crores is to be provided for expenditure incurred in capital by industrial units.

2.1.4.2. Livelihood Generation Program for Migrant Workers

The Government of Mizoram and the Government of Nagaland launched the program with NEC for those who returned to their states due to COVID-19.

(A) Mizoram

The project comes under Mizoram Youth Commission and will receive the funding of INR 3.3 Crore.⁴⁸ The project will have several components to provide livelihoods for migrant workers⁴⁴:

- 11 districts will implement entrepreneurship development program, targeting 550 youths.
- Skill training component will be implemented by the Labor Employment, Skill Development and Entrepreneurship department and will target 150 candidates.
- Mizo University will conduct entrepreneurship skill training for 100 candidates.
- Animation, gaming and designing, and BPO training will be undertaken by around 637 candidates.
- Home based food processing training will be undertaken by 120 candidates.
- Training as tour guides will be undertaken by around 100 candidates and varied number of candidates will receive e-commerce training.

(B) Nagaland

The Department of Industries and Commerce of the Government of Nagaland has launched the program for indigenous returnees to the state who returned via the Special Train, airway or roadway from 22.5.2020 to 6.8.2020.⁴⁹

48 <https://nenow.in/north-east-news/mizoram/mizoram-launches-livelihood-generation-project-for-migrant-workers.html>

49 <https://industry.nagaland.gov.in/livelihood-generation-programme-for-returned-migrant-workers-due-to-covid-19-pandemic/>

The schemes consist of “Awareness and Re-Orientation”, “Capacity Building”, “Re-Skilling of Identified Beneficiaries”, and “Seed Money/Machinery Assistance (up to 2 Lakhs per migrant).”⁵⁰

As of September 2020, INR 2.4 Crores of fund has been allocated to this scheme by NEC.⁴⁵

2.1.5. Industrial structure in the NER

2.1.5.1. NER-GSVA (state-wise)

The percentage contribution of tertiary sector to Gross State Value Added (GSVA) was highest in all the states except Sikkim, leading to the trend of the NER states..⁵¹⁵²

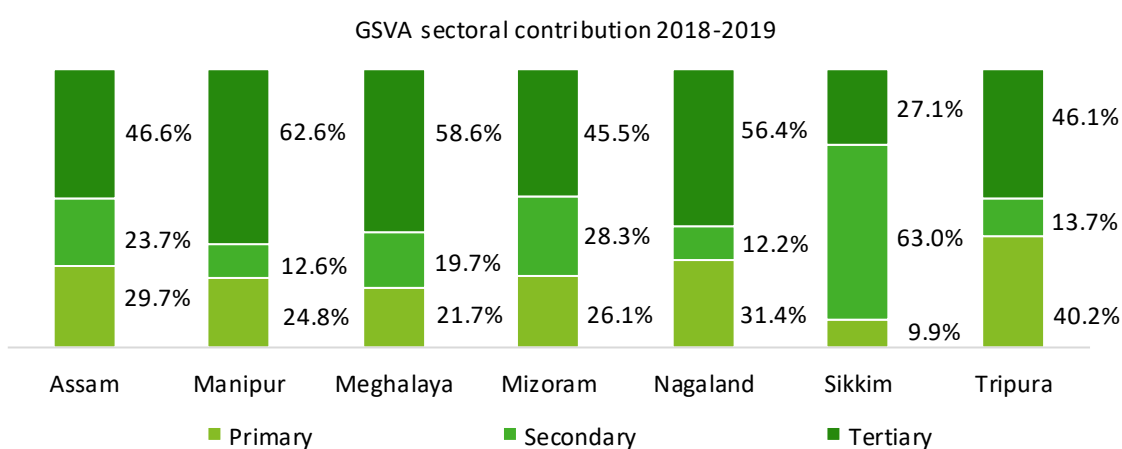


Figure 15: GSVA sectoral contribution in 2018-19 (state-wise)

Looking at the details of the industrial classification in Table 9, it can be seen the importance of the position of agriculture in the primary sector and tourism in the tertiary sector in each state. The states in the Northeastern region fall into the following three categories (Sikkim, Assam and Meghalaya, and the rest of the states).

① Sikkim

In Sikkim, the manufacturing sector accounts for more than 45% of the state GSVA, while agriculture accounts for less than 10%. The high share of manufacturing in Sikkim is due to the investments of large pharmaceutical companies (Cipla, Sun Pharmaceutical industries limited, Zydus Cadila, etc.). After the introduction of the North East Industrial and Investment Promotion Policy (NEIIPP) in 2007, the state of Sikkim attracted the investment of these pharmaceutical companies. It is pointed out that Guwahati, which

⁵⁰ <https://indianexpress.com/article/north-east-india/nagaland/nagaland-launches-livelihood-generation-scheme-for-returning-migrant-workers-6665112/>

⁵¹ “GSVA/NSVA by economic activities”, Ministry of Statistics and Programme Implementation, <http://www.mospi.nic.in/GSVA-NSVA>

⁵² 「GSVA/NSVA by economic activities (Economic activity example (GSVA/NSVA))」 <http://www.mospi.nic.in/GSVA-NSVA>

would have been a more advantageous option in terms of transportation at that time, was not chosen due to security concerns such as riots.

From the perspective of the pharmaceutical industry, pharmaceutical companies that had facilities in Baddi, where the corporate tax exemption was about to expire, needed to find a new location where they could appreciate the corporate tax exemption, and Sikkim became a candidate. Baddi announced its corporate tax exemption in 2003, and many pharmaceutical companies had invested in 2004-2005 to take advantage of it.

Other major success factors include land allocation through subsidized lease payments, sufficient water available, uninterrupted power supply, sufficient manpower, low labor costs, and a road network for transportation.

With this investment by the pharmaceutical company, the government of Sikkim became able to not only create jobs, but also improve the skills of the local workforce.

② Assam and Meghalaya

In the states of Assam and Meghalaya agriculture remains the major industry, but diversification into other industries is also taking place. In Assam, as with agriculture, it is classified as a primary industry, but as shown in Table 9, mining accounts for about 12.4% of the state's GSVA, as oil and natural gas are produced and oil-related manufacturing is also active. Meghalaya is also diversifying into manufacturing and service sectors such as trade. Trade, repair, hotels and restaurants" account for nearly 10% of the total GSVA, and tourism supports the economy.

③ Manipur, Mizoram, Nagaland, and Tripura

In the states of Manipur, Mizoram, Nagaland, and Tripura, agriculture is the major industry, accounting for 20% to 30%. As in ②, "trade, repair, hotels and restaurants" accounts for nearly 10%, and tourism supports the economy.

		Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
Primary sector	Agriculture, forestry and fishing	17.4%	<u>24.8%</u>	18.5%	<u>25.3%</u>	<u>31.3%</u>	9.8%	<u>30.9%</u>
	Mining and quarrying	<u>12.4%</u>	0.0%	3.2%	0.9%	0.1%	0.1%	9.3%
Secondary sector	Manufacturing	<u>12.3%</u>	2.4%	<u>8.9%</u>	0.5%	1.4%	<u>45.4%</u>	3.3%
	Utility services ⁵³	2.4%	2.0%	2.5%	15.9%	2.2%	13.3%	3.9%
	Construction	9.0%	8.2%	8.2%	11.9%	8.6%	4.4%	6.5%
Tertiary Sector	Trade, repair, hotels and restaurants	<u>14.6%</u>	<u>13.6%</u>	<u>21.1%</u>	<u>11.7%</u>	<u>10.5%</u>	5.5%	<u>10.9%</u>
	Transport, storage, communication & services related to broadcasting	5.7%	6.0%	5.9%	3.1%	4.1%	2.3%	3.8%

⁵³ Although the source of statistics does not have an explanation of its definition, it is assumed that the term refers to the electricity, gas, water, and waste management industries.

	Financial services	2.9%	1.8%	2.8%	1.6%	2.5%	1.1%	2.8%
	Real estate, ownership of dwelling & professional services	5.6%	7.3%	5.3%	2.8%	6.5%	3.8%	5.8%
	Public administration ⁵⁴	6.8%	16.1%	13.3%	12.5%	19.4%	6.7%	14.1%
	Other services	11.0%	17.9%	10.3%	13.7%	13.4%	7.6%	8.7%

Table 9: Breakdown of GSVA by sectors (state-wise) in 2019

Note: The green-highlighted items are referred to in the above narratives as distinctive contributors to state-wise GSVA's.

While the Northeastern region as a whole has achieved the same level of growth as India as a whole in recent years, growth in the key industries of agriculture and tourism has stagnated as shown below.

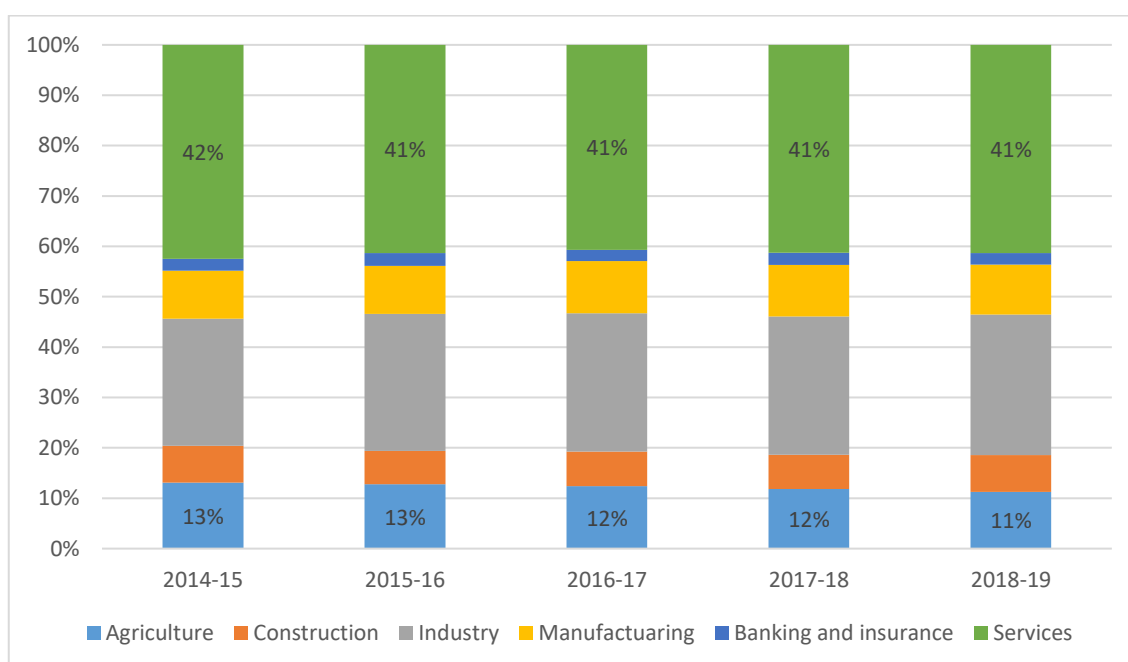


Figure 16: GDP Composition of GDP in the NER

Source: National Statistical Office

2.1.5.2. Industries which the states in NER have strength

⁵⁴ Although the source of statistics does not have an explanation of its definitions, it is assumed that the term refers to the administrative services such as policy implementation, tax collection, and security maintenance activities.

Industries or products which the NER states have strength are agriculture and tourism, especially organic products and eco-tourism.

Tourism, Pisciculture, Bamboo, Dairy, and Tea were identified as thrust areas in the second meeting of the NITI Forum for North East, held by NITI Aayog, MDoNER and NEC in 2018.⁵⁵

(A) Agriculture, forestry and fishing

According to the table 9, the “agriculture, forestry and fishing” sector dominates the GSVA of the NER states except Sikkim. Even Sikkim was declared as the world’s first 100% organic state by Food and Agriculture Organization of the United Nations (FAO) in 2019.⁵⁶ Furthermore, the export import bank of India’s report indicated that one of the key industries that the North East states could focus for exports is the organic industry.⁵⁷

In light of higher value of output compared to other states/UTs in India, those products listed in below (a) to (c) have potentialities in the NER states.

Note: The value of output is the market value produced during an accounting year

(a) Tea (Assam)

The value of output of tea in Assam accounts for around 60 % of India’s overall tea output in 2017-18.⁵⁷ Assam has more than 765 tea gardens. The Special Purpose Tea Fund, a scheme to assist replacing ageing tea bushes with new ones, has been established by the Government of Assam to benefit tea gardens in the state.⁵⁸ Major tea companies in the state include Assam Tea Corp Ltd.(a public entity), Assam Company India Ltd., Apeejay Tea Ltd. and Williamson Magor Group (private entities).⁵⁸

(b) Rubber (Tripura)

Tripura had the second highest value of output of rubber, accounting for approximately 7.4% of India’s overall output in 2017-18.⁵⁷ As of 2018-19, production of rubber in the state stood at 53,050 million tons, which increased compared with 44,245 million tons in 2015-16.⁵⁹ The Government of Tripura is developing the Tripura Industrial Rubber Park in Bodhunnagar for the growth of rubber- based industries in Tripura, located on a 58.81 acres plot.

(c) Cardamom, Pineapple and Passion fruit (Sikkim, Assam, Nagaland and Tripura)

Sikkim is well known for the major producer of cardamom with the second highest value of output in India in 2017-18.⁶⁰

As for pineapple, the value of output of the NER seven states accounts for approximately 45% of the total. Among them, Assam, Nagaland and Tripura had higher values with 17.2%, 8.7% and 8.7%, respectively.⁶²

55 MDoNER website, https://mdoner.gov.in/dashboard/pages/niti_forum.php

56 IBEF website, IBEF website, <https://www.ibef.org/download/Sikkim-December-20201.pdf>

57 <https://www.eximbankindia.in/Assets/Dynamic/PDF/Publication-Resources/ResearchPapers/97file.pdf>

58 IBEF website, <https://www.ibef.org/download/Assam-December-20201.pdf>

59 IBEF website, <https://www.ibef.org/download/Tripura-December-20201.pdf>

60 Ministry of Statistics & Programme Implementation website, <http://mospi.nic.in/publication/state-wise-and-item-wise-value-output-agriculture-forestry-and-fishing-2011-12-2017-18>

Passion fruit is a major product in Manipur and Nagaland. The value of output of Manipur indicated approximately 45% while that of Nagaland was approximately 42% of the total production in India.⁶²

	Tea	Rubber	Cardamom	Pineapple	Passion Fruit
Assam	59.7%	3.2%	0.0%	17.2%	0.0%
Manipur	0.0%	0.2%	0.0%	3.6%	44.8%
Meghalaya	0.1%	1.1%	0.0%	4.9%	0.0%
Mizoram	0.0%	0.0%	0.0%	1.5%	2.1%
Nagaland	1.4%	1.0%	0.4%	8.7%	42.1%
Sikkim	0.0%	0.0%	22.6%	0.0%	0.4%
Tripura	2.5%	7.4%	0.0%	8.7%	0.0%
Other states / UTs	36.3%	87.0%	77.0%	55.5%	10.7%

Table 10: Share of NER states to the total value of output of major products in the NER in 2017-18

Note: The green-highlighted figures are referred to in the above narratives for noticeable value of output.

(d) Eri- and Muga-Silks (Assam and the other NER states)

Furthermore, Eri- and Muga- Silks can be potential products from production perspective. The raw silk is mainly produced in the NER states as the following table demonstrates. These states accounted for approximately 99% of India's total production of Eri- and Muga- Silks in 2016-17. Assam was the top producer of the both types of silks with 64.2% for Eri-Silk and 81.8% for Muga-Silk, respectively.⁶¹

	Eri-Silk	Muga-Silk
Assam	64.2%	81.8%
Manipur	6.5%	0.7%
Meghalaya	15.5%	15.9%
Mizoram	0.2%	0.2%
Nagaland	11.9%	0.7%
Sikkim	0.1%	0.1%
Tripura	0.0%	0.0%
Other states / UTs	1.8%	0.7%

Table 11: Production of Eri- and Muga- Silks in 2016-17

The Government of Assam has undertaken the “Assam Silk Outreach Mission” for a period of ten years from 2016 to promote development of the Eri and Muga Silk varieties. The objective is to produce 10 million kilograms of Eri silk variety and 1 million kilograms of Muga silk variety by 2025.⁶²

61 Ministry of Statistics & Programme Implementation website, <http://mospi.nic.in/publication/statistical-year-book-india>

62 IBEF website, <https://www.ibef.org/download/Assam-December-20201.pdf>

According to the interview, handicrafts, handlooms and weaving sectors in Meghalaya have been picked up especially by the mid-to-higher end segment of the market because of the recent advent of internet and e-commerce retail sector.

(B) Tourism

The NER states attract domestic tourists by pleasant climate and beautiful green. Most of interviewees listed tourism as a potential sector. The states utilize the schemes of both the Government of India and the state governments to nurture the sector.

- In Assam, the Government of India has increased the funds under the centrally sponsored “Integrated Development of Wildlife Habitats” scheme towards the state up to USD 428 thousand for the year of 2017-18.⁶³
- In Manipur, the Government of Manipur inaugurated a new eco-tourism project in February 2021 for attracting more tourists.⁶⁴
- In Meghalaya, the Government of Meghalaya sanctioned INR 2.73 Crores for the establishment of a light and sound show at Wards Lake under the budget 2019-20.⁶⁵
- In Mizoram, the Government of Mizoram inaugurated ‘Thenzawl Golf Resort’ project which will boost tourism post COVID-19 and help generate employment in August 2020.⁶⁶
- In Nagaland, the Government of India includes 24 villages in the state under the rural tourism scheme in order to promote traditional rural art, craft, textile and culture.⁶⁷
- In Sikkim, the Government of India inaugurated the first project under the Swadesh Darshan Project, to promote tourism at the Zero Point, Gangtok, the capital of Sikkim (USD 14.02 million).⁶⁸
- In Tripura, the Government of Tripura has drafted the Tourism Policy 2020-25, with the objective to promote eco, spiritual, adventure and ethnic tourism.⁶⁹

2.1.5.3. Industrial Features of each state in the NER

This section describes the industrial features of each state based on the above analysis.

(A) Assam

In Assam, “agriculture, forestry and fishing”, “mining and quarrying”, “manufacturing” and “trade, repair, hotels and restaurants” mainly contribute to its GSVA. According to the analysis below, Assam has comparative advantage in tea and petroleum (products).⁷⁰

63 IBEF website, <https://www.ibef.org/download/Assam-December-20201.pdf>

64 An interviewee commented

65 IBEF website, <https://www.ibef.org/download/Meghalaya-December-20201.pdf>

66 IBEF website, <https://www.ibef.org/download/Mizoram-December-20201.pdf>

67 IBEF website, <https://www.ibef.org/download/Nagaland-December-20201.pdf>

68 IBEF website, <https://www.ibef.org/download/Sikkim-December-20201.pdf>

69 IBEF website, <https://www.ibef.org/download/Tripura-December-20201.pdf>

70 <https://www.investindia.gov.in/state/assam>

However, there may be gap in industrial competitiveness between urban and rural areas based on the statistics showing that the rural unemployment rate in Assam is higher than the NER average while the figure for the urban area was lower. The fact that per capita NSDP in Assam was lower than the Indian average despite the presence of leading companies could also indicate the gap.

As for “agriculture, forestry and fishing”, tea, pineapple, Eri- and Muga- silks are prominent products, as the Section 2.1.5.2 shows. Between April 2020 and October 2020, production of tea in the state stood at 502.30 million kgs, contributing 52% to the total tea production in India.⁷¹ Tea products cover over 70% of all the exported items in Assam⁷², which may lead to high contribution of “trade, repair, hotels and restaurants” to its GSVA.

Regarding “mining and quarrying”, Assam leverages its affluent natural resources such as limestone and coal⁷³. Within them, the main contributors to its GSVA are petroleum and natural gas; Assam is the third largest producer of petroleum and natural gas in India with a capacity of 150,000 barrels per day.⁷⁴

With regard to “manufacturing”, petroleum products, over 7% of all the exported items, are considered as a major factor for high percentages of this sector in its GSVA. For example, there are 31 industrial units for manufacturing of plastic products which produce 320,000 MT annually.

(B) Manipur

In Manipur, “agriculture, forestry and fishing” mainly contribute to its GSVA, followed by “Public Administration”. According to the analysis below, Manipur has a comparative advantage of passion fruit. However, labor productivity of agriculture sector in Manipur appears to be low. The only remarkable industrial activity is handloom and handicraft though the contribution of manufacturing to it GSVA was just 2.4%.

As for “agriculture, forestry and fishing”, agriculture sector is an important sector and it provides employment to about 52.8% of the total workers in Manipur.⁷⁵ Among products, rice dominates approximately 98% of its food-grain production.⁷⁴ As the Section 2.1.5.2 demonstrate, Manipur is an important production base of passion fruit, because its production dominates 44.8% of the total value of output in India. However, comparing the percentage of workers in agriculture sector to the ratio of the sector to its GSVA ⁷⁶, it can be said that labor productivity of agriculture sector in Manipur is low.

Regarding “Public Administration”, Manipur has the second highest contribution of this sector to its GSVA in the NER, as the Table 9 shows. This number demonstrates that Manipur has yet to achieve the change of industrial structure, which the North Eastern Region Vision 2020 listed as one of its goals.⁷⁷

Apart from the above, the only notable industrial activity in the state is handloom and handicrafts.⁷⁵ The products are in great demand within the state and also even in the national

71 <https://www.ibef.org/download/Assam-December-2020.pdf>

72 IBEF website, <https://www.ibef.org/download/Assam-December-20201.pdf>

73 <https://industriescom.assam.gov.in/portlets/thrust-areas-and-potential-sectors>

74 <https://www.investindia.gov.in/state/assam>

75 <http://desmanipur.gov.in/files/NewsFiles/20Sep2019051341Economic%20Survey,%202018-19.pdf>

76 <https://www.ibef.org/download/Manipur-December-2020.pdf>

77 <http://necouncil.gov.in/about-us/nec-vision-2020-0>

and international markets⁷⁸ though the contribution of manufacturing to its GSVA was just 2.4%.

(C) Meghalaya

In Meghalaya, “trade, repair, hotels and restaurants” and “agriculture, forestry and fishing” mainly contribute to its GSVA. According to the analysis below, there may be more frequent trades outside Meghalaya. Furthermore, Meghalaya has comparative advantage in Eri- and Muga-Silks. However, labor productivity of agriculture sector in Meghalaya appears to be low.

As for “trade, repair, hotels and restaurants”, trade and repair services mainly account for its GSVA (trade and repair services for approximately 20% while hotels and restaurants services for approximately 1.1%)⁷⁹. Compared to other states in the NER, the percentage of this sector is relatively high. The statistics should imply there are more frequent trades with other Indian states and other countries in Meghalaya than in other states in the NER states.

Regarding “agriculture, forestry and fishing”, approximately 81% of Meghalaya’s population depends on agriculture sector for livelihood.⁸⁰ Meghalaya is the second highest producer of Eri- and Muga-Silks in India, as the Section 2.1.5.2 demonstrated. However, comparing the percentage of workers in agriculture sector to the contribution of the sector to its GSVA⁷⁹, it can be said that labor productivity of agriculture sector in Meghalaya is low.

(D) Mizoram

In Mizoram, “agriculture, forestry and fishing” mainly contributes to its GSVA, followed by “utility services”. According to the analysis below, Mizoram may have comparative advantage in handloom and handicrafts though the contribution of manufacturing to its GSVA was just 0.5%. Meanwhile, labor productivity of agriculture sector in Mizoram appears to be low and major companies are public entities on utility services.

As for “agriculture, forestry and fishing”, the forestry and logging sector has high contribution to the state (approximately 11.1%).⁸¹ About 60% of workers in Mizoram are engaged in agriculture and allied sectors, and fresh fruits are ones of main merchandises for exports.⁸² However, comparing the percentage of workers in agriculture sector to the ratio of the sector to its GSVA⁸⁰, it can be said that labor productivity of agriculture sector in Mizoram is low.

Regarding “utility services”, major public related companies, such as North Eastern Power Corporation Limited, National Hydroelectric Power Corporation Limited and National Thermal Power Corporation Limited, invested in Mizoram.⁸³

78 <http://desmanipur.gov.in/files/NewsFiles/20Sep2019051341Economic%20Survey,%202018-19.pdf>

79 “GSVA/NSVA by economic activities”, Ministry of Statistics and Programme Implementation, <http://www.mospi.nic.in/GSVA-NSVA>

80 <https://www.investindia.gov.in/state/meghalaya>

81 “GSVA/NSVA by economic activities”, Ministry of Statistics and Programme Implementation, <http://www.mospi.nic.in/GSVA-NSVA>

82 <https://www.ibef.org/download/Mizoram-December-20201.pdf>

83 <https://www.investindia.gov.in/state/mizoram>

Apart from the above, ethnic handloom and crafts of Mizoram have a large market in India and abroad.⁸⁴ Also, Bamboo crafts and the ready-to-wear ethnic clothing are being marketed by the Government agencies.⁸⁴

(E) Nagaland

In Nagaland, “agriculture, forestry and fishing” mainly contribute to its GSVA, followed by “Public Administration”. According to the analysis below, Nagaland has comparative advantages of pineapple and passion fruit. However, Labor productivity of agriculture sector in Nagaland is likely to be low; The fact that the percentage of Public Administration to its GSVA is the highest in other NER states appears to indicate slow progress in Nagaland in changing the industrial structure.

As for “agriculture, forestry and fishing”, the percentage of this sector to its GSVA was the highest in the NER states, as shown in the Section 2.1.5.1. According to the Nagaland economic survey 2018-19, about 60% of population engaged in agriculture and allied activities⁸⁵. The value of output of pineapple and passion fruit was relatively higher among other Indian states, as the Section 2.1.5.2 demonstrates. However, comparing the percentage of workers in agriculture sector to the ratio of the sector to its GSVA, it can be said that labor productivity of agriculture sector in Nagaland is low.

Regarding “Public Administration”, Nagaland had the highest contribution of this sector to its GSVA in the NER, as the Table 9 shows. Like Manipur, this number appears to indicate slow progress in Nagaland in changing the industrial structure.

Apart from the above, Nagaland is the third highest producer of cobalt in India though the mining and quarrying sector contribute to only 0.5% of its GSVA.

(F) Sikkim

In Sikkim, “manufacturing” mainly contributes to its GSVA, followed by “utility services” and “agriculture, forestry and fishing”. According to the analysis below, Sikkim has succeeded in attracting leading companies of pharmaceutical industries. Furthermore, Sikkim is also known as the fully organic state.

As for “manufacturing”, the higher percentage contribution of manufacturing in Sikkim was attributed to the investment by major pharmaceutical companies, as shown in the Section 2.1.5.1.

Regarding “utility services”, Sikkim is known for a leading north-eastern state in hydro-electric power development.⁸⁶ 28 different projects under PPP mode were identified to strengthen the capacity of hydro power in the state⁸⁷.

With regard to “agriculture, forestry and fishing”, approximately two-thirds of the population depended on it for their livelihoods. Among agricultural products, Sikkim had the second highest value of output of cardamom, as described in the Section 2.1.5.2.. The state was also known as the fully organic state not only from the central ministry but also from FAO.⁸⁸

84 <https://www.ibef.org/download/Mizoram-December-20201.pdf>

85 https://www.statistics.nagaland.gov.in/storage/statistical_data/2019/2531601172059.pdf

86 <https://www.investindia.gov.in/state/sikkim>

87 <https://www.ibef.org/download/Sikkim-December-20201.pdf>

88 <https://www.ibef.org/download/Sikkim-December-20201.pdf>

(G) Tripura

In Tripura, “agriculture, forestry and fishing” mainly contribute to its GSVA. According to the analysis below, Tripura has comparative advantage in rubber and pineapple. The PRAN Group, one of Bangladesh's leading processed-food and beverage companies, invested in the state, but manufacturing sector contributes to only 3.3% of its GSVA .

As for “agriculture, forestry and fishing”, more than 40% of population of the state directly depended on agriculture and allied activities.⁸⁹ Among agricultural products, Tripura had higher value of output of rubber and pineapple, as described in the Section 2.1.5.2. For 2019-20 productivity level of food grain and rice, Tripura was higher than the Indian average.⁹² Meanwhile, comparing the percentage of workers to that of agriculture to its GSVA, it can be said that labor productivity of agriculture sector in Tripura is slightly low.

Note: productivity indicates “kg per hectare” in this section.

Related to the agriculture, “the PRAN Group”, one of Bangladesh's leading processed-food and beverage companies, has set plants in Tripura to expand their businesses into India.⁹⁰ However, the manufacturing sector contributes to only 3.3% of its GSVA.

Apart from the above, Tripura has a better internet connectivity than other states in the NER, as shown in the Section 2.2.1.8. According to Invest India, the state is considered as one of the best IT destinations in the NER.⁹¹ The reason lies in that the government has placed emphasis on cultivating the IT sector since 1999.⁹²

2.1.6. Human resources in the NER

2.1.6.1. Key Industrial human resources policies of the Government of India

Pradhan Mantri Kaushal Vikas Yojana (PMKVY)

The Pradhan Mantri Kaushal Vikas Yojana (PMKVY) is the flagship program of “Skill India” initiative by the Ministry of Skill Development and Entrepreneurship (MSDE).

This scheme aims to train 40 Crore youths by 2022, and there were more than 33 Lakh trained candidates (as of October 2020).⁹³

Phase 3 of the program is to be implemented during 2020-21 and targets to train 8 Lakh candidates. The scheme aims to impart short term trainings (2-6 months), provide training for industry-relevant skill certification, and undertake special projects (based on criteria such as demography and geography). Preferential target allocation is to be made for the NER as per the scheme.⁹⁴

2.1.6.2. Key Features of industrial human resources policies/schemes of the NER states

89 <https://ecostat.tripura.gov.in/eco-review-2019-20.pdf>

90 <https://www.thedailystar.net/news-detail-20358>

91 <https://www.investindia.gov.in/state/tripura>

92 <https://ecostat.tripura.gov.in/eco-review-2019-20.pdf>

93 <https://sarkariyojana.com/pradhan-mantri-kaushal-vikas-yojana-pmkvy-training-centers-list/>

94 Guidelines for PMKVY 3.0 (2020-21), [http://www.pmkvyofficial.org/App_Documents/News/PMKYGuideline_report_\(08-01-2021\)V3.pdf](http://www.pmkvyofficial.org/App_Documents/News/PMKYGuideline_report_(08-01-2021)V3.pdf)

The NER states utilize the central programs such as PMKVY while most of the states have their own schemes for unemployed youths.

State	Outline
Assam	The Government of Assam has been actively involved in infrastructure and platforms for skill development through the Assam Skill Development Mission. ⁹⁵
Manipur	The Government of Manipur has set up 11 Industrial Training Institutes to promote skill development for both the male and females. ⁹⁶
Meghalaya	The Government of Meghalaya creates the Meghalaya State Skills Development Society (MSSDS) to enhance the skill sets of the youth of the state. ⁹⁷
Mizoram	Mizoram has focused on boosting the indigenous capabilities of the state over the years through central initiatives (ex. PMKVY), international government programs (ex. SANKALP*) and schemes at local. ⁹⁸
Nagaland	The Government of Nagaland has conducted the state specific skill development programs to reduce unemployment among the educated youths. ⁹⁹
Sikkim	The Government of Sikkim has developed various institutes to provide various kinds of training programs (ex. State Institute of Capacity Building) for unemployed youths and school and college dropouts. ¹⁰⁰
Tripura	Tripura has developed 16 Industrial Training Institutes to train citizens with an intake capacity of more than 3,350 people. ¹⁰¹

Table 12: Features of industrial human resources policies/schemes of the NER states

Note: Skill Acquisition and Knowledge Awareness for Livelihood Promotion (SANKALP) is an outcome-oriented project supported by World Bank. The project will focus on the overall skilling ecosystem covering both Central (MSDE, NSDA and NSDC) and State agencies, and outcomes will be measured through Disbursement Linked Indicators (DLIs) agreed between MSDE and the Bank.¹⁰²

2.1.6.3. Labor market in the NER

In spite of those efforts by the Government of India and the state governments explained in the previous section, the NER states seem to have an insufficient number of skilled human resources according to interviews. More specifically, most of the interviewees pointed out that local workers in the NER are not sufficiently equipped with higher technological skills or with business/operational skills.

For example, an interviewee mentioned that “workers in the NER are not skilled enough to be employed in the industry, although most of the industries in the region are dependent on

95 <https://skillmissionassam.org/>

96 <http://desmanipur.gov.in/files/NewsFiles/20Sep2019051341Economic%20Survey,%202018-19.pdf>

97 <https://mssds.nic.in/doc/meghalayastateskillsdevelopmentframework.pdf>

98 <https://planning.mizoram.gov.in/uploads/attachments/4d6a424cb421f1fafef5c29cb0068b83/economic-survey-2019-20.pdf>

99 <https://desd.nagaland.gov.in/wp-content/uploads/2020/05/annual-report-2020.pdf>

100 <https://sikkim.gov.in/departments/state-institute-of-capacity-building/concept-of-livelihood-school>

101 https://ecostat.tripura.gov.in/Eco_Review_2018-19.pdf

102 <http://desmanipur.gov.in/files/NewsFiles/20Sep2019051341Economic%20Survey,%202018-19.pdf>

local manpower”. Another pointed out that “most of the small-scale enterprises in the NER are operating as homesteads. None of the sectors are mechanized making scalability an issue...therefore, there is a need to develop capacity in the NER across the value chain of various businesses.”

Considering the findings from the interviews, the reasons for the lack of skilled workers have been identified into two, that is, the outflow of skilled workers to other states and ineffective implementation of human resources policies.

First, skilled workers leave from the NER to larger cities to seek for jobs with higher salary and sectors which has not yet flourished as the below comments from interviews show.

- “The corporates establish their retail/ branch offices and not their respective nodal/ regional or headquarters in the NER and therefore most senior level management positions are not based in the NER. Further, the pay scale in these is not similar to metros such as Bangalore, Mumbai, Delhi, etc. “
- “The State does not have the capacity to provide employment for all the educated population”
- “Our state has a sizeable section of skilled educated young population. However, a number of people from the state have been working in other cities such as Kolkata, Bengaluru, etc. primarily in the software industry.”

Second, although policies for skill development exist, these policies are not effectively implemented according to interviewees as below.

- “The Government of India has various schemes to facilitate skill development in the state, but the training infrastructure across the state needs improvement”.
- “Most people have a penchant for gathering certificates of trainings, but their attendance and the amount of time they spend on the training is not optimum. This has led to registration for certification courses whereas skill development among the participants is below par.”

However, most of interviewees answered that graduates from higher education institutions such as IIM and IIT are as capable as those from other regions since those are national level. While some noted that general exposure to business culture should be enhanced.

2.1.6.4. The status of workers and students who returned to the NER due to the COVID-19

The abrupt surge of COVID-19 triggered large-scale return of migrants who once emigrated from the NER to the other states of India. Although the number of returnees varies significantly according to the time of reporting, local media reported that 350,000 people returned to the NER as of June 2020.¹⁰³ The following table shows the reported number of returnees to each state.

103 <https://www.outlookindia.com/newscroll/over-350-lakh-returnees-take-covid19-cases-in-ne-india-to-2156/1853870>

State	Number of returnees
Assam	250,000 (as of June 2020) ¹⁰⁴ - 350,000 (as of July 2020) ¹⁰⁵
Manipur	43,000 (as of July 2020) ¹⁰⁶
Meghalaya	15,000 (as of June 2020) ¹⁰⁷
Mizoram	10,000 (as of June 2020) ¹⁰⁸
Nagaland	17,157 (as of July 2020) ¹⁰⁹ - 40,000 (as of September 2020) ¹¹⁰
Sikkim	5,715 (as of May 2020) ^{111*}
Tripura	39,799(as of May 2020) ^{112*}

Table 13: The number of returnees to each state in the NER

*Note: The figures for Sikkim and Tripura are not the number of returnees itself but the number of stranded people in the other parts of India who registered with the state governments that they hoped to return.

It is reported that 125,000 among 250,000 people returning to Assam were migrant workers. Also, for Sikkim, the breakdown of the 5,715 stranded people hoping to return to the state is shown as students (1,427), patients (201), medical workers (227) and others (3,859). ¹¹³¹¹⁴

Most of the interviewees mentioned that a number of skilled workers are included in the above returnees to the NER states. However, interviewees insisted that the state governments should create jobs for these talented workers, which indicates that there have not yet been enough employment opportunities in the NER.

The shortage of job opportunities for those with skills is demonstrated by a comment of another interviewee that “[After COVID-19 spread] the labor market for workers and students in [the] NER and across India has been limited...most of the population had to compromise by taking jobs which do not match their skill set. These workers that returned during COVID-19 have not been able to gain employment in the NER and are therefore travelling back to the metro cities. “

104 <https://indianexpress.com/article/north-east-india/assam/database-skill-training-how-assam-plans-to-absorb-returning-workers-6447755/>

105 <https://economictimes.indiatimes.com/news/politics-and-nation/covid-19-bjp-in-assam-to-reach-out-to-migrant-returnees-to-provide-rehabilitation/articleshow/77024373.cms?from=mdr>

106 <https://www.eastmojo.com/news/2020/07/02/how-3-northeast-states-dealt-with-reverse-migration-amid-covid-19/>

107 <https://indianexpress.com/article/north-east-india/behind-northeast-covid-19-surge-stranded-migrants-returning-home-6457181/>

108 <https://indianexpress.com/article/north-east-india/behind-northeast-covid-19-surge-stranded-migrants-returning-home-6457181/>

109 <https://www.nagalandpost.com/over-17-000-have-returned-to-nagaland-apc/218431.html>

110 <https://www.eastmojo.com/news/2020/09/22/nagaland-congress-slams-govt-over-covid-19-cess-rising-unemployment/>

111 <https://www.eastmojo.com/sikkim/2020/05/08/ne-states-led-by-sikkim-seeking-special-train-for-evacuation/>

112 <https://www.hindustantimes.com/india-news/first-shramik-special-train-to-tripura-brings-1-200-people-from-bangalore/story-cfn3UGAdowTyr9EJXksyYK.html>

113 <https://indianexpress.com/article/north-east-india/assam/database-skill-training-how-assam-plans-to-absorb-returning-workers-6447755/>

114 <https://www.eastmojo.com/sikkim/2020/05/08/ne-states-led-by-sikkim-seeking-special-train-for-evacuation/>

To tackle this situation, most of the NER state governments initiated new schemes for those who returned to their home states. For example, the Government of Meghalaya is trying to encourage these people to start their own business through the Promotion and Incubation of Market-driven Enterprises (PRIME) program, which is to be detailed in the section 2.2.4.4. The Government of Mizoram and the Government of Nagaland started “Livelihood Generation Program for Migrant Workers” with NEC, as the section 2.1.4.2. demonstrates. In addition to these governmental approaches, the private sector also attempts to address the unemployment issue triggered by COVID-19 from the aspect of technical assistance. For instance, the Entrepreneurs Associates, an NGO in Nagaland, launched training of fruit jam-making for unemployed women, mostly returnees.¹¹⁵

After impact of the second wave of the Covid-19 lessons, it was confirmed through interviews that most of the returnees have come back to original jobs in other regions.

2.1.7 The validity of three hypotheses

The validity of the initial three hypotheses in the Section 1.3. varies by states according to the findings of this initial research.

- Hypothesis 1: The NER states depend on agriculture with low productivity while there are few private companies leading industries in this region: that is, business activities in this region are inactive.

Hypothesis 1 is valid in rural area of Assam, Manipur, Mizoram, Nagaland, Tripura, because their main industry is agriculture. Meanwhile, it cannot be applied to the urban area of Assam, Meghalaya and Sikkim where their economy is diversified to varying degree. Regarding business activities, while Sikkim has succeeded in attracting pharmaceutical companies, Assam has major oil related public sector undertakings. Since the existence of business activities were not fully confirmed here, it is further analyzed in 5.1 based on additional interviews.

- Hypothesis 2: The absence of groups of companies leading industries results in limited employment opportunities in the NER states.

Hypothesis 2 is valid in general in the NER states though in varying degrees. As detailed in 2.1.6.4, the large number of returning workers in the NER indicates that the region has not been able to offer sufficient employment opportunities, which has caused outflow of talents. As the Section 2.1.5.3 shows, interviewees pointed out that skilled workers leave for other states because there are limited job opportunities suitable for their skills.

- Hypothesis 3: As a result of Hypothesis 1 and 2, the NER states underutilize abundant young labor force, although it is one of their strengths which hinders investments from both inside and outside this region.

Hypothesis 3 explains one aspect of disinvestment in states except for Sikkim and Assam. Hypothesis 3 does not seem to hold true in Sikkim, as the pharmaceutical industry seems to be creating jobs in the state. In Assam, although the business activities mentioned in Hypothesis 1 are observed, there is no employment to match the working population, which leads to a high unemployment rate and an outflow of human resources, which is considered

¹¹⁵ <https://www.eastmojo.com/news/2020/09/28/addressing-unemployment-crisis-in-nagaland-entrepreneurs-associates-finds-way/>

to be one of the reasons preventing investment from within and outside the state. As described in Section 2.1.3.5, many interviewees mentioned factors which deter investments, such as the insufficient connectivity in terms of transport and internet, unfavorable business environment, limited opportunity of funding, and lack of entrepreneurial talents.

Regarding the capacity of talents in the NER, many interviewees pointed out the necessity of updating training infrastructure and smooth implementation of human resource policies and schemes.

3. Current status of environment to promote the growth of entrepreneurs and companies (startups and MSMEs) in the NER

The analysis in 2.1 revealed that various factors have discouraged investment in the NER and the growth of existing industries in the region has been limited. Based on this, the environment surrounding the growth of entrepreneurs and firms including SUs and MSMEs in the NER was investigated. In the following, unless otherwise explained, this environment will be described as the "ecosystem".

In the following discussion, startup (SU) means a company that has been in business for less than 10 years and has an annual turnover of less than Rs. 100 crore (approximately \$13 million). They often aim to grow rapidly by developing products, services or business models that have never been seen before, based on according Startup India's definition.

Whereas Micro, Small and Medium Enterprises (MSME) have similar size, MSMEs often focus on continuous expansion of their business through improvement of existing products and services.

Entrepreneurs are individuals who have business ideas that could become founders of SUs and MSMEs but have not yet established a business.

The companies to be developed in or attracted to such ecosystem should be a driving force to create new industries and job opportunities in the NER. To do so, it would be necessary for these companies to have a solid business model and/or technology as well as a vision to expand their businesses beyond the market in the region and compete with companies in other states of India and overseas.

The JICA study team also considers the key point for such ecosystem in the NER is industry-university-government collaboration as in many cases universities serve as a pipeline of human resources and technology seeds, private companies develop and commercialize them, and government provides support in filling the gap and creating an enabling environment.

Section 3 therefore examines the enabling environment to generate and nurture entrepreneurs and private companies and to attract investments. It also examines potential human resources to contribute to the realization of industrial development.

3.1. The NER-wise ecosystem

Although Assam is slightly advanced compared with other states, overall ecosystem of all the NER states is an emerging ecosystem and requires sustainable support from governmental players and the private sector to overcome key challenges, not unique to its ecosystem, to realize its full potential. According to interviews with key industrial bodies like Federation of Indian Chambers of Commerce and Industry (FICCI) and Confederation of Indian Industry (CII), and

Federation of Industry and Commerce of North Eastern Region (FINER), the most important challenges for region's growth are:

- Human Resources:
Lack of mentors and guidance

- Tech Seeds:
Poor power and energy infrastructure
Inability to attract industries and set up industrial parks
Lack of effective technical assistance to startups and MSME

- Financial Resources:
Lack of seed funding for startups associated with the absence of investors

- Others:
Poor connectivity with the rest of the country
Limited market and consumer base for new market
Sourcing of raw material from outside the region

3.1.1. MSMEs in the NER states

The number of MSME has grown in the seven states between 2006-07 to 2015-16. Every government has formulated a startup policy to create an ecosystem in each state.

State	MSME total number of Units (MSME total employment) Lower column: Number of SUs on Startup India	Outline of MSME and SU Support Policy
Assam	12,140,000 (18,160,000) 1,780	<ul style="list-style-type: none"> • The number of MSME in Assam has grown at a CAGR of 7.0% between 2006-07 to 2015-16. • The MSME sector in Assam is expected to exhibit further growth, backed by the recent MoU with SIDBI and various skill development measures. • The Assam startup policy 2017 aims to promote the launch of 1,000+ startups in the next five years by providing holistic support for startups.
Manipur	1,800,000 (2,920,000) 54	<ul style="list-style-type: none"> • The number of MSME in Manipur has grown at a CAGR of 7.9% between 2006-07 to 2015-16. • Manipur has focused on boosting MSME ecosystem through state initiatives such as Make in Manipur and central level initiatives such as PMEGP*. • The Manipur Startup Policy aims to create conducive environment through partnerships with different technical and management institutes and enhance accessibility for startups at different stages.
Meghalaya	1,120,000 (1,910,000) 14	<ul style="list-style-type: none"> • The number of MSME in Meghalaya has grown at a CAGR of 2.7% between 2006-07 to 2015-16.

State	MSME total number of Units (MSME total employment) Lower column: Number of SUs on Startup India	Outline of MSME and SU Support Policy
		<ul style="list-style-type: none"> The Meghalaya Startup Policy promotes the development of an online startup portal, startup innovation parks, and incubation centers in educational intuitions. Meghalaya Entrepreneurship Promotion Strategy 2020-2025 has been set to provide systematic and targeted support to aspiring entrepreneurs through a network of PRIME HUBs.
Mizoram	350,000 (620,000) 6	<ul style="list-style-type: none"> The number of MSME in Mizoram has grown at a CAGR of 2.1% between 2006-07 to 2015-16. The Mizoram Entrepreneurship & Startup Policy, 2019 lay out different initiatives to encourage and develop entrepreneurs. The policy has been framed in a way which is easy to understand and promotes ease of doing.
Nagaland	910,000 (1,770,000) 20	<ul style="list-style-type: none"> The number of MSME in Nagaland has grown at a CAGR of 9.9% between 2006-07 to 2015-16. The improvement in business infrastructure coupled with MSME specific initiatives such as Start-up Nagaland and YouthNet start “Impact 5,000 by 18” has led to the rise of MSMEs in the state. The Nagaland Startup Policy in 2019, which focuses on developing incubators via a PPP model, aiming at fostering 5,000 startups in the next 5 years.
Sikkim	260,000 (450,000) 48	<ul style="list-style-type: none"> The number of MSME in Nagaland has grown at a CAGR of 4.8% between 2006-07 to 2015-16. Sikkim Micro Small and Medium Enterprise and Startup Policy in 2019 (draft policy) aims to promote and develop entrepreneurship in the state by providing various incentives and benefits Chief Minister’s Startup Scheme and Skilled Youth Startup Scheme assist entrepreneurs in transforming their ideas to startups through financial and market assistance.
Tripura	2,110,000 (2,950,000) 40	<ul style="list-style-type: none"> The number of MSME in Nagaland has grown at a CAGR of 8.9% between 2006-07 to 2015-16. The state government have started Swabalamban program to generate self-employment in the state by providing monetary and technical assistance to individuals. Tripura’s first business incubation center was opened in Tripura University in Feb 2020 with a fund of INR 1 Crore to promote the startup culture in the state

Table 14: Outline of MSME and SU Support Policy¹¹⁶¹¹⁷

116 <https://m.rbi.org.in/Scripts/PublicationsView.aspx?id=20108>

117 <https://m.rbi.org.in/Scripts/PublicationsView.aspx?id=20104>

Note: Prime Minister Employment Generation Program (PMEGP)

- The objective of the PMEGP is to generate employment in both rural and urban areas for the MSMEs. The scheme is managed by the Khadi and Village Industries Commission (KVIC) at the central level and is being implemented at state and district levels by state KVICs and district industrial centers.
- The subsidy is 15% of project unit for urban areas, 25% for rural areas. Extra subsidies benefits are applicable for women, Scheduled Caste (SC)/Scheduled Tribe (ST) categories, NER states (25% for urban and 35% for rural)

3.1.2. Startup India

The Startup India initiative was announced by the Prime Minister of India on 15th August 2015. The main objectives of the Startup India scheme were to make it easier for startups to get funds, to create an environment in which startups can sustain themselves, and that is conducive for their growth.¹¹⁸

For this, funding was provided to incubators and labs; tax benefits were offered and INR 10,000 Crores fund was set up to help the startups in raising funds.

The recognition process for startups has been made relatively simple with a mobile application and website.

Another objective was to encourage employment through startups. In 2018, startups created 2.64% of the total jobs in India. This scheme created more than 1,87,000 jobs by 2019.

After the launch of the Startup India, all the seven states have formulated their own startup policies as below;

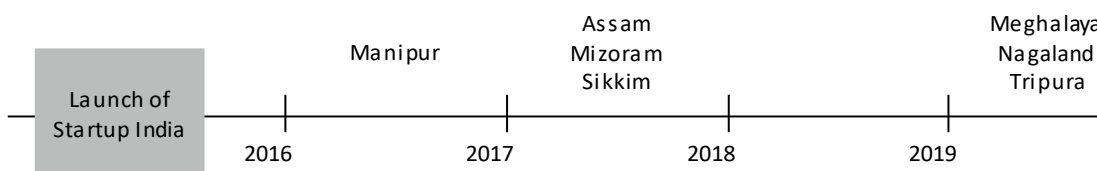


Figure 17: Formulation of startup policies in the NER states

Startup India publishes a ranking of states and Union Territories evaluating the performance of ecosystem, in which most of the NER states are recognized as “emerging”, which is the most primitive stage, as shown in the following figure.¹¹⁹

118 <https://www.startupindia.gov.in/>

119 https://www.startupindia.gov.in/content/dam/invest-india/compendium/National_Report_09092020-Final.pdf



5.3.1 BEST PERFORMER

The 'Best Performer' category recognizes the State/UT which is ahead of all other States/UTs, overall in the ranking framework. The State/UT has also aced the ranking in the overall assessment and has undertaken novel measures to promote the Startup ecosystem. The performance by the 'Best Performer' State/UT also reflects the maturity of its Startup ecosystem thereby setting benchmark for other States/UTs.



5.3.2 TOP PERFORMERS

The 'Top Performers' category recognizes States/UTs which have displayed visionary leadership and took strategic initiatives to strengthen innovation and entrepreneurship ecosystem within their jurisdictions. These States/UTs have exhibited unwavering commitment to the growth of their startup ecosystems by taking dedicated and focused initiatives across all pillars of the State Startup ranking framework.



5.3.3 LEADERS

The 'Leaders' category recognizes the States/UTs which have set clear vision for their Startup initiatives and measurable goals for their Startup community. They are particularly impressive in outreach activities and connecting with upcoming entrepreneurs. The Leaders are building upon their good work to scale up their Startup initiative to progress to 'Top Performers' category.



5.3.4 ASPIRING LEADERS

The 'Aspiring Leaders' category recognizes the States/UTs which have exhibited a performance worth acknowledging in select pillars of the ranking framework and are at advance stages of implementation of their Startup policy objectives. They have well-established support structures for Startups and have been consistently refining the delivery and communication infrastructure to enable these Startups to compete at a global scale.



5.3.5 EMERGING STARTUP ECOSYSTEMS

The 'Emerging Startup Ecosystems' category acknowledges States/UTs which are rapidly scaling-up the Startup ecosystem knowledge curve. These States/UTs are in the process of strengthening the institutional mechanism to organize and scale their Startup Programmes to replicate the success stories from the leading States/UTs.

Figure 18: Startup India Ranking Logic

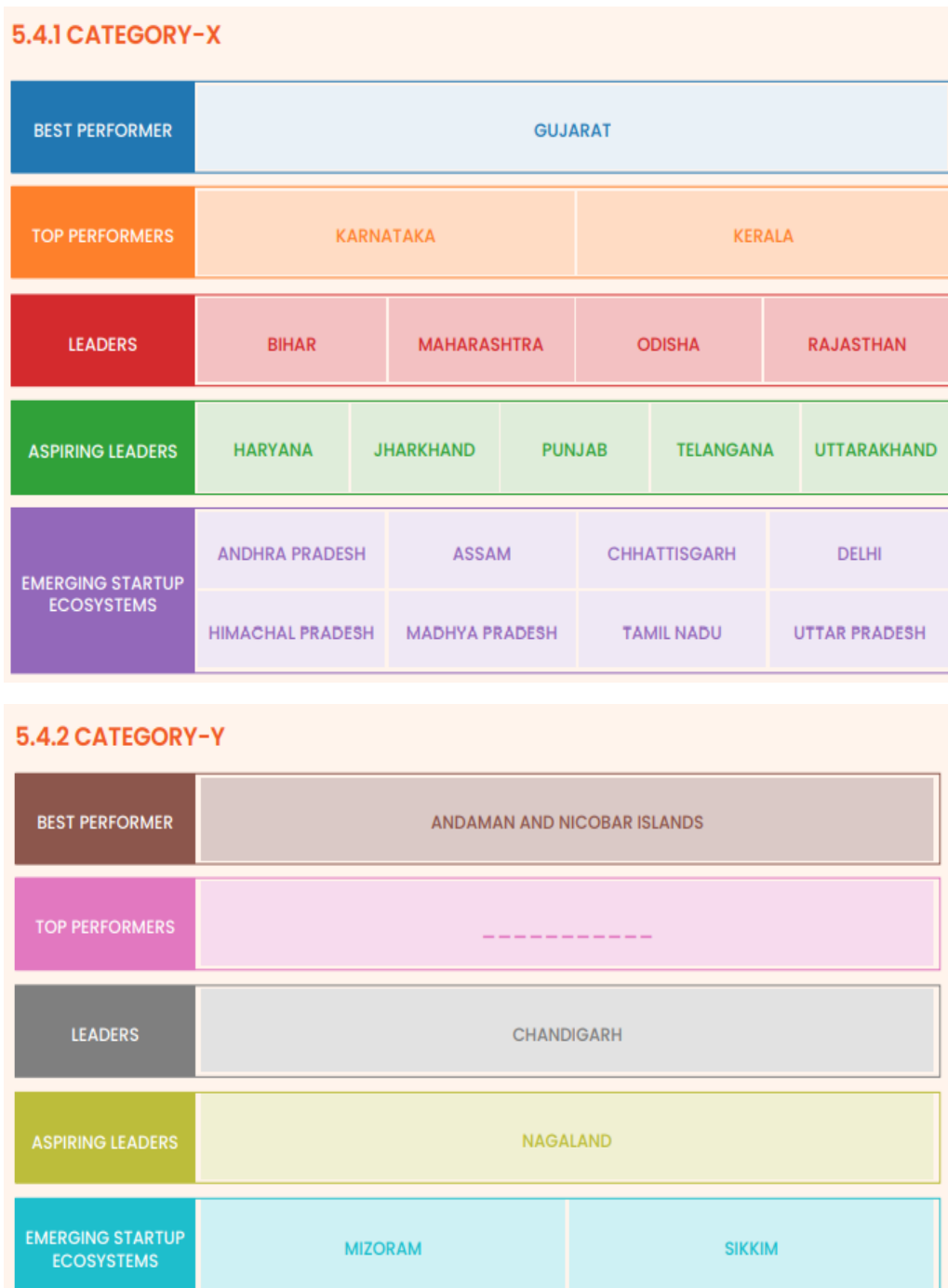


Figure 19: Startup India Ranking 2019 Results

To establish uniformity and ensure standardization in the ranking process, States and Union Territories (UTs) were divided into Category-X and Category-Y. Category-X entails states and UTs with a well-established ecosystem. Category-Y includes all UTs, except Delhi, and all states in the NER, except Assam. Category-X is meant for states and UTs, which are far more developed than states and UTs in Category-Y. The categorization is important for standardization purposes for a fair evaluation.

All the states/UTs have been grouped into five grading categories based on the percentile score ranges. A percentile score indicates how well a State or UT has performed in comparison to other States or UTs. A State's or UT's percentile rank range indicates that the state/UT scored as well as, or better than, the percent of States/UTs which participated in the ranking exercise. The States/UTs with similar percentile score range have been graded in a common group i.e. grading category.

Accordingly, five percentile-based grading categories are as follows:

BEST PERFORMER: 100 percentile.

TOP PERFORMERS: More than 75 to less than 100 percentile.

LEADERS: More than or equal to 30 to less than or equal to 75 percentile.

ASPIRING LEADERS: More than 10 percentile and less than 30 percentile.

EMERGING STARTUP ECOSYSTEMS: Less than or equal to 10 percentile.¹²⁰

Note: Even though the evaluation guidelines state that “all the states/UTs have been grouped into five grading categories based on the percentile score ranges.”, certain states like Manipur, Meghalaya and Tripura were not placed in any of the 5 categories.

3.1.3. Definition of MSMEs and startups

As for the definition of MSMEs, the Government of India has re-defined it post COVID-19 to aid a wider section of companies in availing facilities and incentives provided by the government as below^{121,122}.

Classification	Prior to COVID-19 (Criteria: Investment in machinery, plant or equipment)		effective July 2020 (criteria: Investment and annual turnover)
	Manufacturing enterprises	Service Enterprises	Manufacturing and services
Micro	Investment less than INR 25 Lakhs	Investment less than INR10 Lakhs	Investment less than INR1 crore and Turnover less than INR5 Crores
Small	Investment less than INR 5 Crores	Investment less than INR 2 Crores	Investment less than INR 10 Crores and Turnover less than INR 50 Crores
Medium	Investment less than INR 10 Crores	Investment less than INR 5 Crores	Investment less than INR 20 Crores and Turnover less than INR 100 Crores

Table 15: Definition of MSMEs

120 https://www.startupindia.gov.in/content/dam/invest-india/compendium/National_Report_09092020-Final.pdf

121 <https://msme.gov.in/faqs/q1-what-definition-msme#:~:text=What%20is%20the%20definition%20of%20MSME%3F%20The%20Government,processing%20or%20preservation%20of%20goods%20as%20specified%20below%3A>

122 <https://msme.gov.in/know-about-msme>

Regarding the definition of a startup, the DPIIT has relaxed it to enable more entities to apply for recognition, as Table 15 shows¹²³.

Date	Startup definition
7 th February 2016	<p>An entity shall be considered a startup:</p> <ul style="list-style-type: none"> A) Up to FIVE YEARS from the date of its incorporation/registration, B) If its turnover for any of the financial years has not exceeded Rs 25 Crore, and C) It is working TOWARDS INNOVATION, DEVELOPMENT, DEPLOYMENT OR COMMERCIALISATION OF NEW PRODUCTS, PROCESSES OR SERVICES DRIVEN BY TECHNOLOGY OR INTELLECTUAL PROPERTY; <p>*Provided that any such entity formed by splitting up or reconstruction of a business already in existence shall not be considered a ‘startup’</p>
23 rd May 2017	<p>An entity shall be considered as a Startup:</p> <ul style="list-style-type: none"> A) if it is incorporated as a private limited company (as defined in the Companies Act, 2013) or registered as a partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2008) in India; and B) up to seven years from the date of its incorporation/ registration; however, in the case of Startups in the biotechnology sector, the period shall be up to ten years from the date of its incorporation/ registration; and C) if its turnover for any of the financial years since incorporation/ registration has not exceeded rupees 25 crore; and D) if it is working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation. <p>*Provided that any such entity formed by splitting up or reconstruction of a business already in existence shall not be considered a ‘Startup’.</p>
19 th February 2019	<p>An entity shall be considered as a Startup:</p> <ol style="list-style-type: none"> 1. Up to a period of ten years from the date of incorporation/ registration, if it is incorporated as a private limited company (as defined in the Companies Act, 2013) or registered as a partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2008) in India. 2. Turnover of the entity for any of the financial years since incorporation/ registration has not exceeded Rs 100 crore. 3. Entity is working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation. <p>*Provided that an entity formed by splitting up or reconstruction of an existing business shall not be considered a ‘Startup’.</p>

Table 16: Definition of a startup

123 [https://www.startupindia.gov.in/content/dam/invest-india/Templates/public/5_years_Achievement_report%20_%20final%20\(1\).pdf](https://www.startupindia.gov.in/content/dam/invest-india/Templates/public/5_years_Achievement_report%20_%20final%20(1).pdf)

3.1.4. Prominent Startups in NER

Startups in the NER have leveraged natural resources and assets of their respective regions to empower their local communities through startups and entrepreneurship. Below is the list of companies which are mentioned in news articles or governmental portal site.

Year Founded	Stakeholder Name	Area of Technology	Description of Startup	Location
2018	Northeast Flavours Pvt Ltd	Food/ E-Commerce	Northeast Flavours (brand named as East By North East) is a food processing (farm to table) company that sources ghost pepper and other fruits from the NER and processes the same to make sauces, spreads, preserves, and jams.	Assam
2014	Pratyaksha AgroTech Pvt Ltd*	AgriTech	Pratyaksha Agrotech runs the first and only private sector Tissue Culture Production facility in the NER. The company is engaged in the production of Tissue Culture Plantlets. The company also engaged in chemical extraction activities.	Assam
2018	My3dselfie	3D	My3dselfie is the world's first to create fully customizable and full personalized 3D figurines from just photos. Unlike its competitors, who create 3D figurines from 3D scans, My3dselfie creates amazing fully body figurines just from few photos.	Assam
2016	Zizira	Food/ E-Commerce	Zizira is an out-of-the-ordinary e-Commerce startup in the food sector. Our vision is to prove the agricultural potential of Northeast India by creating an online market for food products based on a wide variety of unique herbs and spices that grow naturally in this region	Meghalaya
2017	Medilane	Healthcare	Medilane, the most trusted Ambulance service provider in the state, with an aim towards making affordable and accessible ambulance service to the public.	Manipur
2018	Thangvung Privilege Services	Healthcare	Healthcare startup Thangvung Privilege Services has a privilege card that offers financial assistance for medical emergencies at zero percent EMI and 24X7 doorstep medicine delivery.	Manipur

Year Founded	Stakeholder Name	Area of Technology	Description of Startup	Location
2017	OSK Food and Technology Pvt Ltd	E-Commerce/ Food Delivery	OSK Food and Technology is an app-based virtual/cloud kitchen based out of Guwahati, Assam. It was the first-ever cloud kitchen application in North-East India. They are also listed on food aggregator applications Swiggy, UberEats, and Zomato. They are catering to a monthly customer set of 5,000 via all platforms.	Assam
*Introduced by IIM-CIP				

Table 17: Prominent startups operating in the NER¹²⁴

3.1.5. Prominent Startups/Entrepreneurs from NER operating outside the region

Several startups with origins in NER are either operating outside the NER or are catering to a pan-India, and International customer base. Below is the list of companies which are mentioned in news articles or governmental portal site.

Year Founded	Stakeholder Name	Area of Technology	Description of Startup	Location
2015	Parking Rhino*	IoT/ Parking	ParkingRhino Online provides smart parking solutions for both Business to Consumer (B to C) and Business to Business (B to B) clients. Their patented algorithm helps users search and reserve parking real-time while enabling parking contractors/municipalities to manage parking lots remotely with revenue analytics, smart alerts auditing tools, etc.	Delhi-NCR / Bangalore / Mumbai
2015	Terra-Blu Exploration Technologies Pvt Ltd *	Healthcare	Terrablu XT is a healthcare company developing a wearable (in the form of a glove) biomonitor which will be interconnected through a mobile app for early detection of epilepsy seizure and stroke.	Bangalore
2016	Atvi Infotainment Pvt Ltd **	Entertainment	Atvi Infotainment is engaged with promoting the NER through its infotainment platform. This shall broadcast through internet videos, articles, news from NER through its reporters on the ground, and its studios located in the NER.	Assam

124 "Venture Capital Investment in Northeast India Startups", <https://www.linkedin.com/pulse/venture-capital-investment-northeast-india-startups-nickson-sharma/>

2017	Brahmaputra Fables **	Textile	Brahmaputra Fables is a new generation digital integration of Artisans, Weavers, Designers, Organic Farmers and Micro Entrepreneurs of North East India.	Assam
2017	Dweller Teas**	Tea/Agriculture/E-Commerce	Dweller Teas is a tea startup that offers multiple blends made with indigenous herbs, plants, and fruits.	Manipur
*The startup founders are from NER and founded the company outside the region. Both are investee companies of NEDFi through NEVF				
**The startups cater to the states outside NER and sometimes to other countries as well. Introduced by IIM-CIP				

Table 18: Prominent startups from the NER catering to customers outside the NER¹²⁵

3.1.6 The resource of potential entrepreneurs

Lack of incubation facilities, lack of entrepreneurship related curricula, and the need for job security have resulted in a decline in SUs from universities.

IIM-CIP plays an important role in the ecosystem by supporting prominent SUs and filling the gap of facilities available in other universities.

University	Focus Area	Location
National Institute of Technology (NIT)	Engineering	Sikkim, Silchar, Agartala (Manipur), Tripura, Mizoram, Meghalaya
Indian Institute of Technology (IIT)	Engineering	Guwahati (Assam), Silguri (Kolkata)
Indian Institute of Management (IIM)	Management	Kolkata, Shillong (Meghalaya)
Assam Science and Technology University	Sciences/Engineering	Assam
Tripura University	Business	Tripura
Sikkim Manipal University	Technology/Business	Sikkim

Table 19: List of top universities to support startups in the NER

IIM Calcutta

IIM Calcutta and IIM Calcutta Innovation Park (IIM-CIP) plays a pivotal role in developing the entrepreneurs and startups of the region by acting as the official partner and mentor of several government backed startup programs. Several of the most prominent startups from the region have been incubated at IIM Calcutta.

¹²⁵ "Venture Capital Investment in Northeast India Startups", <https://www.linkedin.com/pulse/venture-capital-investment-northeast-india-startups-nickson-sharma/>

- **The North East Accelerator Program (NEAP):** IIM-CIP, in association with the Department of Science and Technology (DST), launched NEAP which is aimed at recognizing potentially game-changing early-stage entrepreneurs from North-East India and creating a supportive ecosystem to help them scale up their businesses.
- **Startup The Nest:** IIM-CIP is collaborating with the Government of Assam in catalyzing the entrepreneurship movement in the state in general and creating a state-of-the-art incubation facility. It will support startups across multiple sectors with access to infrastructure, network, mentorship and funding, with a higher mission of developing Assam into North East India's Startup Hub.¹²⁶

3.1.7. Public finance institution, public investment vehicle

(A) Small Industries Development Bank of India (SIDBI)

Small Industries Development Bank of India (SIDBI) set up on 2.4.1990 under an Act of Indian Parliament, acts as the Principal Financial Institution for Promotion, Financing and Development of the Micro, Small and Medium Enterprise (MSME) sector as well as for co-ordination of functions of institutions engaged in similar activities.¹²⁷

(B) NEDFi

NEDFi is one of the key nodal agencies involved in coordinating the credit disbursement to Industrial enterprises in the NER. It is an NBFC based out of Guwahati, operating in the NER; and has been in operation for the last 25 years.

NEDFi has been involved in financing various sectors in the NER with a sector agnostic approach; aiding in the form of term loans with period ranging from 7 to 9 years.

NEDFi works closely with Ministry of Development of North Eastern Region (MDoNER), Govt. of India and North Eastern Council (NEC) in various projects in sectors such as healthcare, education, handloom/handicraft, and other core sectors such as manufacturing. It is also involved in supporting Small and Medium Enterprises by providing various incentives.

NEDFi also has a CSR program wherein they provide livelihood trainings based on the requirements and strengths of different states in the NER. This includes provision of capacity building trainings on sectors such as handlooms, handicrafts, piggery, agriculture and allied sectors, bakery, etc.

(C) North East Venture Fund

In 2019, NEDFi created a INR 100 Crore corpus called NE-Venture fund to support startups in the NER. This corpus has been created with the support of MDoNER, the Government of India and SIDBI venture. It functions as an equity funding organization providing term loans over a period of 7-8 years.

Presently, NEDFi has a commitment of INR 59 Crores to approximately 29 startups across NER; dealing in sectors such as food processing, adventure tourism, agriculture-allied

126 <http://www.iimcip.org/neap/>

127 <https://www.sidbi.in/en/about-sidbi#overview>

services, Healthcare, Education, Mobility, etc. This is a wholly owned subsidiary of NEDFi and functions as a Venture Capital Fund for startups in the NER.

NEDFi also conducts trainings programs for micro-finance institutions and NGOs to help them develop into NGO-MFIs or NBFCs (10 to 15 years ago, some of these NGOs had the capacity to handle INR 2-5 Lakhs. At present these organizations are handling INR 10-25 Lakhs; and are raising resources to support micro finance institutions under them). NEDFi is also supporting these organizations with equity with the aim to support their conversion process into NBFCs.

The minimum loan provided under VC in INR 25 Lakhs and the loan size ranges from INR 2 Lakhs to 10 Crores. As of 2021, NEDFi has a portfolio of 166 loans each with a loan size of below INR 1 Crore. However, NEDFi can provide loans up to INR 30 Crores towards a single project.

3.1.8. ICT Infrastructure

The internet penetration rate in the NER on average is as low as 38%, while that of India is around 50 percent in 2020¹²⁸.

State	Internet subscribers in Million	Wireless internet subscribers (2019) In Million	Broadband subscriptions (2019) in Million	Internet penetration rate (2019)	Number of wireless telephones (2020) in Million	No. of villages lacking mobile connectivity (2018)
Assam	13.03 (2019)	11.44 (50% rural)	10.05 (99% wireless)	38%	23.6 (99.5% of total phones)	2,503
Manipur	7.97 (2020)	6.56 (42% rural)	5.93 (98.8% wireless)		11.9 (99.2% of total phones)	528
Meghalaya						2,374
Mizoram						252
Nagaland						134
Sikkim						23
Tripura						2

Table 20: ICT infrastructure across the NER states

Source: <https://myspeed.traai.gov.in/>,
<https://dot.gov.in/sites/default/files/Telecom%20Statistics%20India-2019.pdf?download=1>
<https://cms.iamai.in/Content/ResearchPapers/59923bed-ad4f-439b-b6d9-487fbbc16103.pdf>

3.2. Assam State

¹²⁸ https://www.statista.com/topics/2157/internet-usage-in-india/#topicHeader__wrapper

3.2.1. Characteristics of the Ecosystem

With the presence of prestigious universities and government support, Assam is the most promising ecosystem of the NER but requires tech seeds and financial resources to grow further.

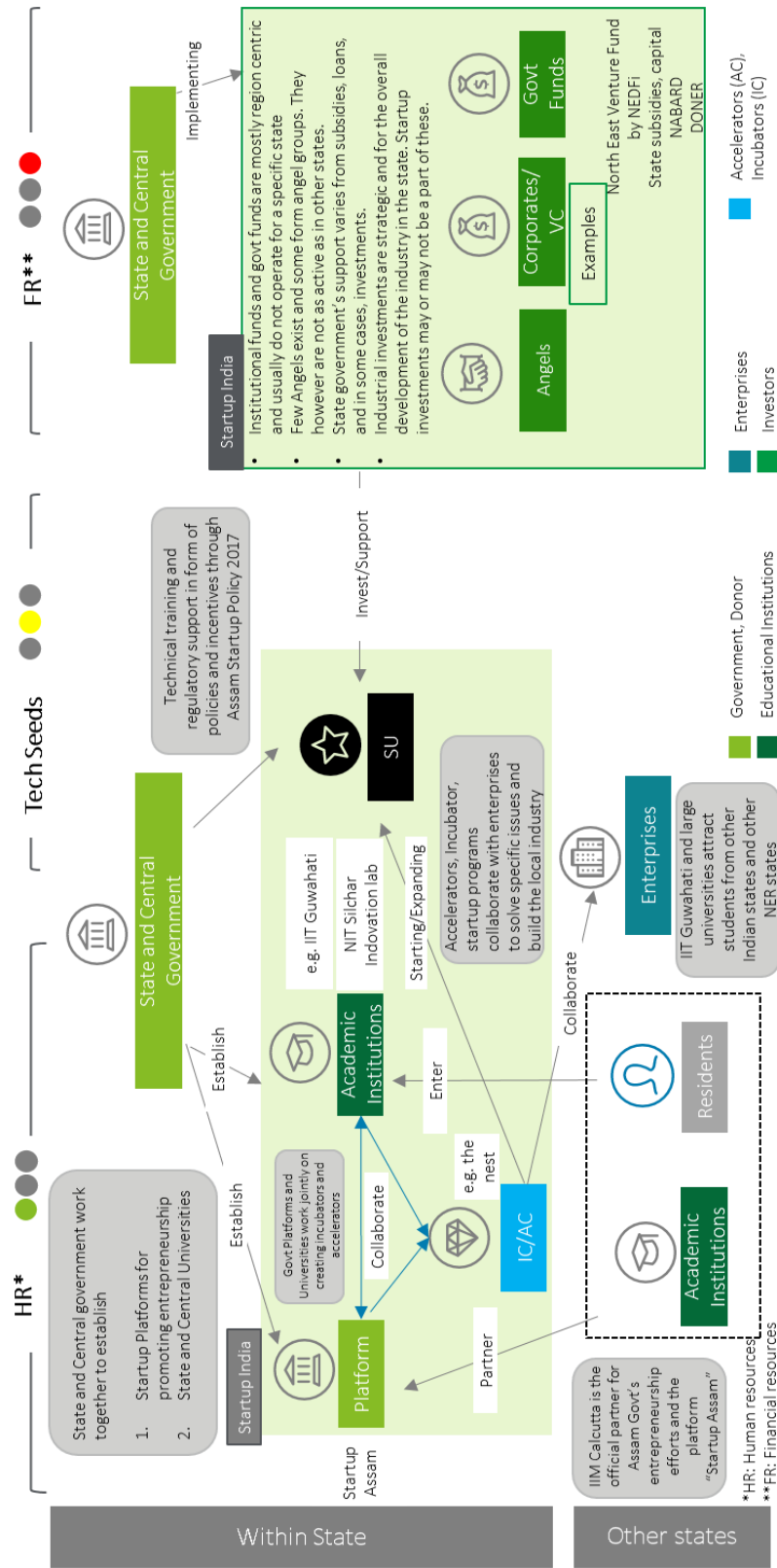








Figure 20: Bird's eye overview of the Assam ecosystem

Note:

In this study, ecosystem will be evaluated on Human resources, Tech seeds and Financial resources as these criteria are essential elements of the development of ecosystem. The below is the definition of each criterion.

- Human resources**
- 
- System and infrastructure to support human resources of startups (entrepreneurial education at universities and graduate schools, etc.)
 - Attracting human resources with entrepreneurial ability and motivation
- Tech seeds**
- 
- Technical support through accelerators, etc. (Hands-On support)
 - Research outcomes that are likely to be commercialized
 - Ideas of use of technology
 - Functions to promote commercialization (TLO, etc.)
- Financial resources**
- 
- Seed funding (angel investors, etc.)
 - Scale Up Funding (VC, CVC, etc.)
 - Alternative investors (impact investors)

In order to demonstrate visually the current status of each criteria, three categories are used; green as the most advanced, yellow as middle, and red as the least advanced. The criterion of categorization is as follows. This is a universal framework to evaluate startups ecosystems created in JICA's "Data Collection Study for Startup /Entrepreneur Support the study". However, in this study the evaluation is done by taking into consideration the fact that the NER ecosystem is still quite primitive in general, rigid application of criterion does not help in comparison among ecosystems, and the goal is to do the comparison and identify the most promising ecosystems among the NER states.

	Red ● Grey ● Grey ●	Grey ● Yellow ● Grey ●	Grey ● Grey ● Green ●
Human resources 	There are no (or almost no) of the following three points: <ul style="list-style-type: none"> • Training of entrepreneurial human resource by the government, universities, etc. • Department and human resources in the government on SU promotion • System for attracting outside human resources (visas, etc.) 	<ul style="list-style-type: none"> • Although all or any of the three points are met to a certain extent, there is still a shortage of high-level human resources such as management level and engineers in startups as well as government officials. 	<ul style="list-style-type: none"> • There is a sufficient pool of highly skilled entrepreneurs to start a business. And this mechanism is continuous and sustainable.
Tech seeds 	None (or nearly none) of the following 4 points <ul style="list-style-type: none"> • Basic Policies for SU Promotion • Accelerators and incubators which groom dozens of appropriately selected SUs • Accumulation of research results at universities, etc. • Mechanism to promote commercialization of research results (including IP) 	<ul style="list-style-type: none"> • Although all or any of the following three points are met to a certain extent, the following problems (examples) remain. <ul style="list-style-type: none"> ✓ Lack of qualified mentors to run acceleration program ✓ Lack of R & D and commercialization mechanisms (especially cooperation with Overseas and Large Enterprises) 	<ul style="list-style-type: none"> • There are sufficient experienced accelerators (e.g., SU funding success rate is higher than a certain level) to support entrepreneurs. • R & D and commercialization mechanisms function autonomously (or partly with government support)
Financial resources 	There are no (or almost no) of the following two points: <ul style="list-style-type: none"> • Laws and regulations to promote VC and CVC activities (Example: Capital gain tax exemption, allowance of convertible note, etc.) • Financer to seed and early stage startups 	<ul style="list-style-type: none"> • All or any of the two points are met to a certain extent, but the following problem (examples) remain. <ul style="list-style-type: none"> ✓ Lack of risk money supply (e.g., systematic problems, absence of matching funds, shortage of VC and CVCs, etc.) 	<ul style="list-style-type: none"> • There are financers covering each stage of SUs and necessary finance is provided to SUs seamlessly.

Salient characteristics of the ecosystem of Assam is as follows:

- Assam was the only state from NER in Category-X in the Startup India ranking and recognized as emerging ecosystem by the Government of India.
- Assam Start-up Policy 2017 aims to bolster employment and focuses on early-stage startups.
- Assam is home to large and prestigious universities like IIT Guwahati (IIT G) and Assam Science and Technology University.
- With support from IIM Calcutta, “The Nest”, a state incubator aims to build a comprehensive innovation ecosystem.
- While placed better than other states, the ecosystem is still lacking access to sustainable flow of venture capital.¹²⁹

3.2.2. Assam Startup Policy (2017)

(A) Policy Vision

To establish an ecosystem for startups in Assam, to generate employment, and to nurture startups in the initial stages

(B) Key initiatives under the Assam Start-up Policy

- **Digital startup ecosystem:** Development of a portal or startups to facilitate aggregation of information and in setting up infrastructure. The portal is also used for developmental programs and online training.

¹²⁹ <https://www.sentinelassam.com/north-east-india-news/assam-news/assam-plans-to-develop-its-msme-ecosystem-mou-signed-with-sidbi-51703>

- **Development of infrastructure:** Establishment of a startup incubator space and Electronics Systems and Design Manufacturing (ESDM) innovation center.
- **Human capital and skill development:** The Government of Assam aims to create a conducive environment at school and college levels. Entrepreneurship Development Cells are also being established at colleges.¹³⁰

Incentives offered to startups	Description
Digital upgradation subsidy	The state government provides 50% subsidy for purchase of equipment such as hardware, software, and computers for startups
Lease rental reimbursement	50% subsidy for rental costs up to three years, capped at INR 5 Lakhs
Power subsidy	50% subsidy for up to five years, capped at 1 Lakh
Patent filing cost reimbursement	The cost of filing a patent can be reimbursed up to INR 1 Lakh per Indian patent. For foreign patents, the cost is capped at INR 5 Lakhs
Incentives for special categories	A one-time incentive of INR 50,000 for women, transgenders, and differently abled people is provided for three years
Marketing and promotion assistance	The costs of marketing/promotion including travel costs can be reimbursed, capped at a limit of INR 5 Lakhs per startup
Incentive for entrepreneurs	Any entrepreneur will be given an incentive of INR 20,000 per month for a period of one year

Table 21: Incentives offered to startups

3.2.3. Key achievements and impact on startups and MSMEs

(A) Achievements

The state's Industries and Commerce department signed a Memorandum of Understanding with the Small Industries Development Bank of India (SIDBI) ¹³¹ in December 2020. Under this MoU, a Project Management Unit (PMU) was established by SIDBI with the Government of Assam in enhancing the MSME sector in the state.

More than 200 pacts worth INR 70,000 Crores have been signed during the Advantage Assam summit, 2018. This is expected to boost the growth of MSMEs and employment in the sector.

Land availability: One of the key advantages of the State of Assam in comparison to other NER States are the land banks. The Government of Assam has large pools of land parcels available

¹³⁰ https://startup.assam.gov.in/wp-content/uploads/2019/01/og_2017.pdf

for development of Industries and aims to increase the land bank by another 30,000 Bighas in the next 5 years.

The Government of Assam has been fostering development of numerous industrial estates through the Assam Industrial Development Corporation (AIDC) and Assam Infrastructure Industrial Development Corporation (AIIDC). Moreover, the Government of Assam has provided basic infrastructure in these estates such as power connection, water supply, etc. to attract private investors and industrial estates. In 2018, Reliance Industries (India's largest multinational conglomerate company headquartered in Mumbai) announced an investment of INR 2,500 Crores in sectors such as retail, telecom, petroleum, sports, and tourism. This is expected to create jobs for more than 80,000 people in the state in the next three years.

According to the interview with CII, the Assam Startup Policy has been instrumental in giving a push to startups through grants. Assam also returns the state GST paid by various units for 15 years to promote MSME growth.

As per an interview with representatives of the Government of Assam, an initiative called “Ease of Doing Business Amendment Act” by the Government of Assam was passed to ensure that enterprises are able to set up units in the state seamlessly. Under this act, around 680 services across various departments of the state government has been set up online. The act was amended in 2019 (from 2016) wherein two new amendments were added – (i) Auto-renewal of clearances required from various departments, (ii) Central clearance system has been made online with the support of NIC to ease the renewal process for industries and enterprises.

(B) Impact

Assam Startup by the Government of Assam, in collaboration with IIM Calcutta: Under this policy, approximately 179 startups have been incubated, 82 identification numbers (DIN) have been provided, 45 startups have been provided with grants; and 44,686 persons have gained employment. The startup revenue that has been generated by February 2021 is approximately INR 42.6 crores, according to the Government of Assam.

3.2.4. Contribution of Major Players

(A) IIT Guwahati

It is a public technical and research university established by the Government of India and the sixth Indian Institute of Technology established in India. It is officially recognized as an Institute of National Importance by the Government of India and ranked 7th both in engineering and overall category in National Institutional Ranking Framework (NIRF) India Rankings 2020. As per the interview with the Government of Assam, IIT Guwahati has signed a number of MoUs with several departments of the Government of Assam for various services such as handholding for selection of startups/consultants, consultancy services, etc.

(a) Support programs for entrepreneurs

The Technology Development Board, under the Ministry of Science and Technology, the Government of India, has approved grant assistance to Indian Institute of Technology Guwahati – Technology Incubation Centre (IITG-TIC) to support startups units.

This center facilitates interdisciplinary research with special emphasis on development and innovation of high-growth-knowledge-based-business and nurtures the indigenous products with innovative hardware/embedded designs.

Technical support, business mentoring and soft loan facility (which is subject to availability) are the key services of this Centre.

(b) Incubator Programs

Technology Incubation Centre – Technology Incubation Centre – Indian Institute of Technology Guwahati (iitg.ac.in)

IITG-TIC has supported 30 - 32 SUs and has completed support to 11-12 SUs so far. In addition to program at IITG-IIC, the New Generation Innovation and Entrepreneurship Development Centre focuses on supporting IIT-G students to create prototypes, which could be seed for starting business.

IITG-TIC's activities are supported by CSR activities of corporates. For example, IITG-TIC has signed MOU with Numaligarh Refinery Limited (NRL), a public sector undertaking, located in Assam in 2019 for support of SUs. NRL has started Startup fund since 2017 and selected 29 SUs for grant scheme. For further strengthen technical support for the selected SUs, Tripartite MOU among IIT-G TIC, NRL, Vigitrics Private Limited was signed in March 2021. Vigitrics Private Limited is a SU which develops "Intelligent Drowsiness Detection System." The founders of this SU are consisted by a student of IIT-G and a student at Tezpur University. In this MOU, the cost of IIT-G TIC'S mentoring and technical support is borne by NRL. Oil India, which is also a public sector undertaking, located in Assam, has a similar cooperation with IIT-G TIC.

(c) IIT-G Research Park

The research park is contracted by companies for carrying out specific activities. While this is not for SUs, these companies may also have a dynamic relationship with startups depending on mutual interest. The park attracted companies from outside of the region, which might be explained by two factors. One is the comparatively cheap rent. The other is the benefit to collaborate with anyone in the campus.

(B) Assam Science and Technology University

It is a university established by the Government of Assam and aims to provide education and research in the field of science and technology. The university is responsible for academic regulation of all undergraduate and postgraduate programs in engineering, and pharmaceutical sciences and a few professional courses in science and management sectors.

(a) Support programs for Entrepreneurs

The University provides the following support:

1. Act as an institutional mechanism to provide services to budding entrepreneurs.
2. Conduct awareness programs in house and at other institutes.

3. Enhancing industry institute interaction through guest lectures and industry visits.
4. Conduct programs on idea generation and business plan preparation and skill development

(b) Incubator Programs

Assam Science and Technology University has established the Startup Cell with an objective to start the startup culture across all affiliated institutes of Assam Science and Technology University.

(C) Guwahati Biotech University

It is a visionary project launched by an autonomous society under the Government of Assam to promote entrepreneurship in the NER.

- **Support programs for Entrepreneurs**

Guwahati Biotech Park Incubation Center, the incubation center at the University, is targeted at young professionals interested in developing an innovative business idea. The programs are also aimed at researchers at universities and research bodies interested in developing the results of their own research through the creation of a spin-off in the NER of India in the area of science and technology.

(D) Indian Institute of Entrepreneurship

Indian Institute of Entrepreneurship (IIE) is an autonomous organization under the MSDE.

The main aim of the Institute is to provide training, research and consultancy activities in Small and Micro Enterprises with special focus on entrepreneurship development.

- **Support programs for Entrepreneurs**

The Institute supports entrepreneurs in helping in:

1. Designing and organizing training activities for different target group and undertaking research in the relevant to entrepreneurship.
2. Improving the efficiency, effectiveness and delivery of the change agents and development practitioners i.e. trainers, support organizations engaged in enterprise building, etc.
3. Provide consultancy service to the prospective and existing entrepreneurs.
4. Increasing the outreach of activities of the institute through collaborative activities and increasing their effectiveness through use of different tools of information technology.

3.3. Manipur State

3.3.1. Characteristics of the Ecosystem

The Government of Manipur has made initiatives to improve regulations and ease of starting up but requires a further investment in skilling human resource to build technical capabilities.

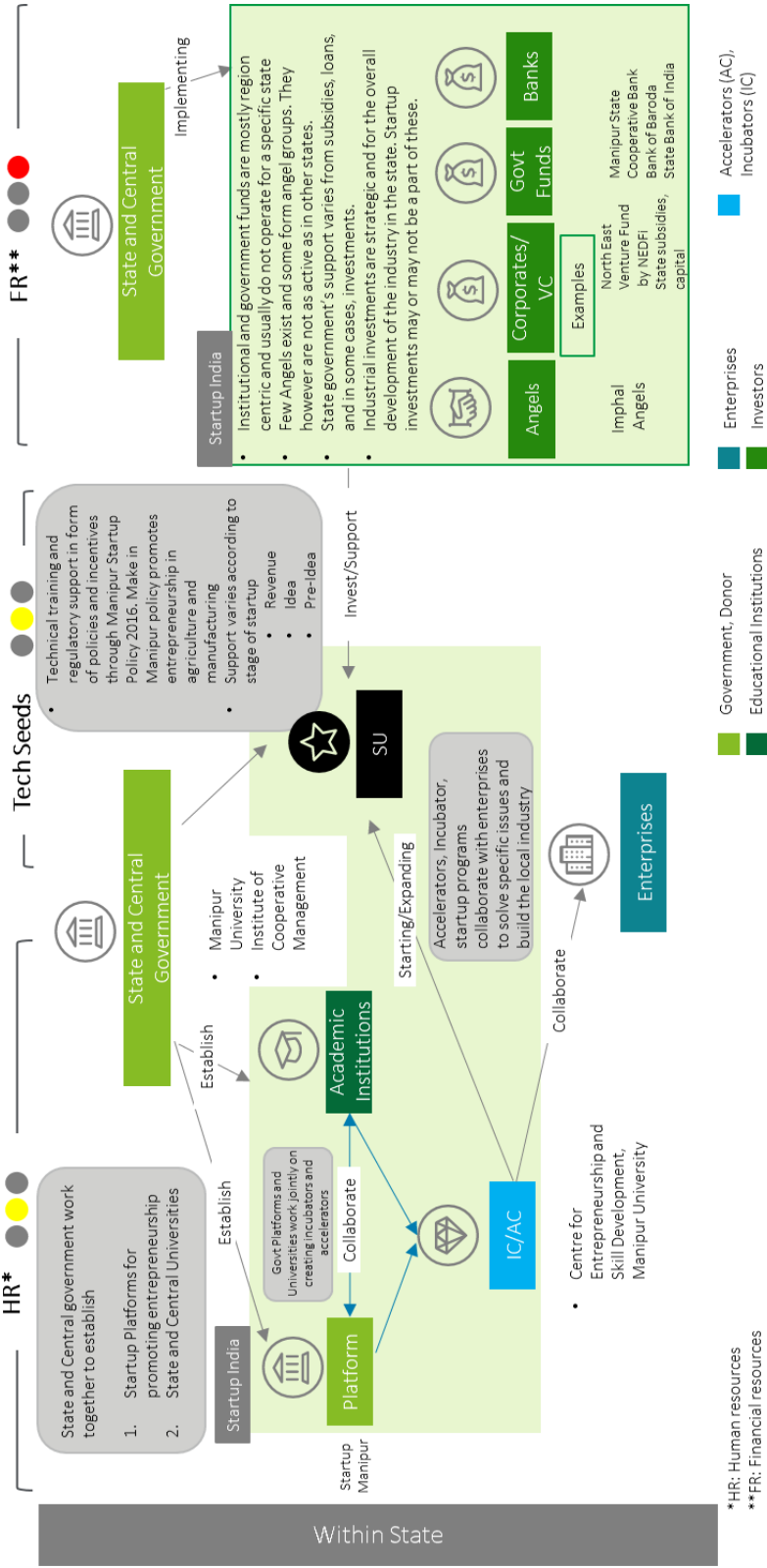


Figure 21: Bird's eye overview of the Manipur ecosystem

Salient Characteristics of the Ecosystem:

- Manipur did not place in Startup India Rankings even though it was in Category-Y along with other northeast states.
- Manipur Startup Policy aims to identify sectors with high potential for entrepreneurship by leveraging strengths of the state.
- The Government of Manipur established Startup Manipur, a platform, to assist startup stakeholders and to create a hassle-free system for availing the several incentives and schemes under the Manipur Startup Policy.
- Prestigious universities, entrepreneurship curriculum as well as facilities such as incubators (both public and private) are important building blocks and starting points to create an ecosystem that can produce success cases. Lack of the above has resulted in a slow development of the ecosystem and fewer success cases.
- In order to attract financial resources from private players, the state needs to invest in key building blocks of the ecosystem to produce startups which can scale their business across the country and produce favorable returns for the investors.
- Manipur is a land-locked state. The nearest port is Kolkata and the state is connected via two national highways to the mainland. At present, logistics of goods is limited through national highways and the airways making it expensive.
- Due to unavailability of raw material, Manipur barely meets the requirements of the local markets and additional support is required to reach the state's export potential.
- The State lacks warehousing and supply chain facilities.
- Lack of rail connectivity has further limited the potential to reach other markets.

3.3.2. Manipur Startup Policy 2016

Manipur Startup Policy 2016 was launched to create conducive environment and enhance accessibility for startups at different stages, based on which a range of incentives are provided.

The missions of the policy are:

- To encourage sectors that can have multiplier effect and conducting entrepreneurship development activities through leveraging various strength areas of state.
- To Identify industries with innovation potential and where new business domains or innovative sub sectors can emerge.
- To provide support to create 200 startups in next 5 years (from 2016) with special focus on minorities and women.
- To strengthen startup culture by creating hassle free regulatory processes, providing financial support, and increase access to knowledge.

One of the recent achievements of the policy is the ranking that the state received in NITI Aayog's innovation index which was released in January 2021. Manipur ranked 3rd amongst the north eastern and hilly region in innovation¹³².

The Planning Department of the Government of Manipur formulates plans and acts as a chief communication mediator between the state and the center.

Under the policy, the following incentives are provided to startups at different stages:

Incentives	Description
Pre-Idea Stage	<ol style="list-style-type: none"> 1. The state government will bear all the expenses with a ceiling of INR 10 Lakhs for setting up of entrepreneurship development centers in colleges. 2. The state government will also fund innovation activities with a maximum limit of INR 10 Lakhs. 3. Assistance for enabling Network of Entrepreneurship Development Centers (NEDC) through partnership with education institutes. The state government will fund for maximum of 2 faculties at any one of the business incubators in or outside the state.
Proof of Concept Stage	Cost of patent application will be reimbursed by the state for incubated startups and assistance will be provided for creating a network of kickstarter funds.
Pilot Stage	<ol style="list-style-type: none"> 1. Fiscal incentive at 1% for registered venture capital funds for investing in Manipur based startups in the form of success fee. 2. Fiscal incentive at 2% for incubators on the investment received by incubatee. 3. Grant for business incubators at 5% for investment received by incubatee which promotes rural technology-based promotion and which promotes solution for better access to resources by rural areas. 4. Other incentives such as electricity duty subsidy, market development support, and annual awards etc.

Table 22: Incentives provided to startups under the Manipur Startup Policy 2016¹³³

3.3.3. Startup Manipur

The Government of Manipur has established a separate platform in the form of Startup Manipur to assist startup stakeholders and delivering a hassle-free process in creating a supportive system.

The platform aims to create an enabling environment through establishing network of entrepreneurship development centers, business incubators on preferential lease basis to nurture startups, provide access to resources and mentorship, and giving access to potential markets

132 <https://timesofindia.indiatimes.com/city/imphal/manipur-3rd-among-northeast-hilly-states-in-innovative-index/articleshow/80406017.cms>

133 <https://startupmanipur.in/wp-content/uploads/2020/09/Startup-Scheme-Guidelines.pdf>

outside Manipur.

Stage	Target	Incentives
Idea	For innovative scalable business idea	Subsidy of INR 3 Lakhs and business incubation training
Revenue	Existing entrepreneurs who are planning to scale their business	Subsidy at 30% with max of INR 30 Lakhs and 65% loan from banks
Entrepreneurship Support Scheme (ESS) Category	Existing micro entrepreneurs	Subsidy of INR 1 Lakh and bank loan of INR 2 Lakh
Standup Stage	For greenfield projects with focus on deprived sections, SC/ST/OBC/women/minority.	Subsidy at 30% with max of INR 30 Lakhs and 65% loan from banks

Table 23: Incentives for startups under different stages of Startup Manipur

The entrepreneur selected for the support is required to mandatorily undergo training. The Manipur University provides the skill and capacity building required under Startup Manipur. Apart from Manipur University, private empaneled agencies also provide training for the same.

3.4. Meghalaya State

3.4.1. Characteristics of the Ecosystem

Forward looking policies and setting up of Promotion and Incubation of Market-driven Enterprises (PRIME) Startup Hubs mean Meghalaya holds potential for the future once the impact of these initiatives start becoming visible.

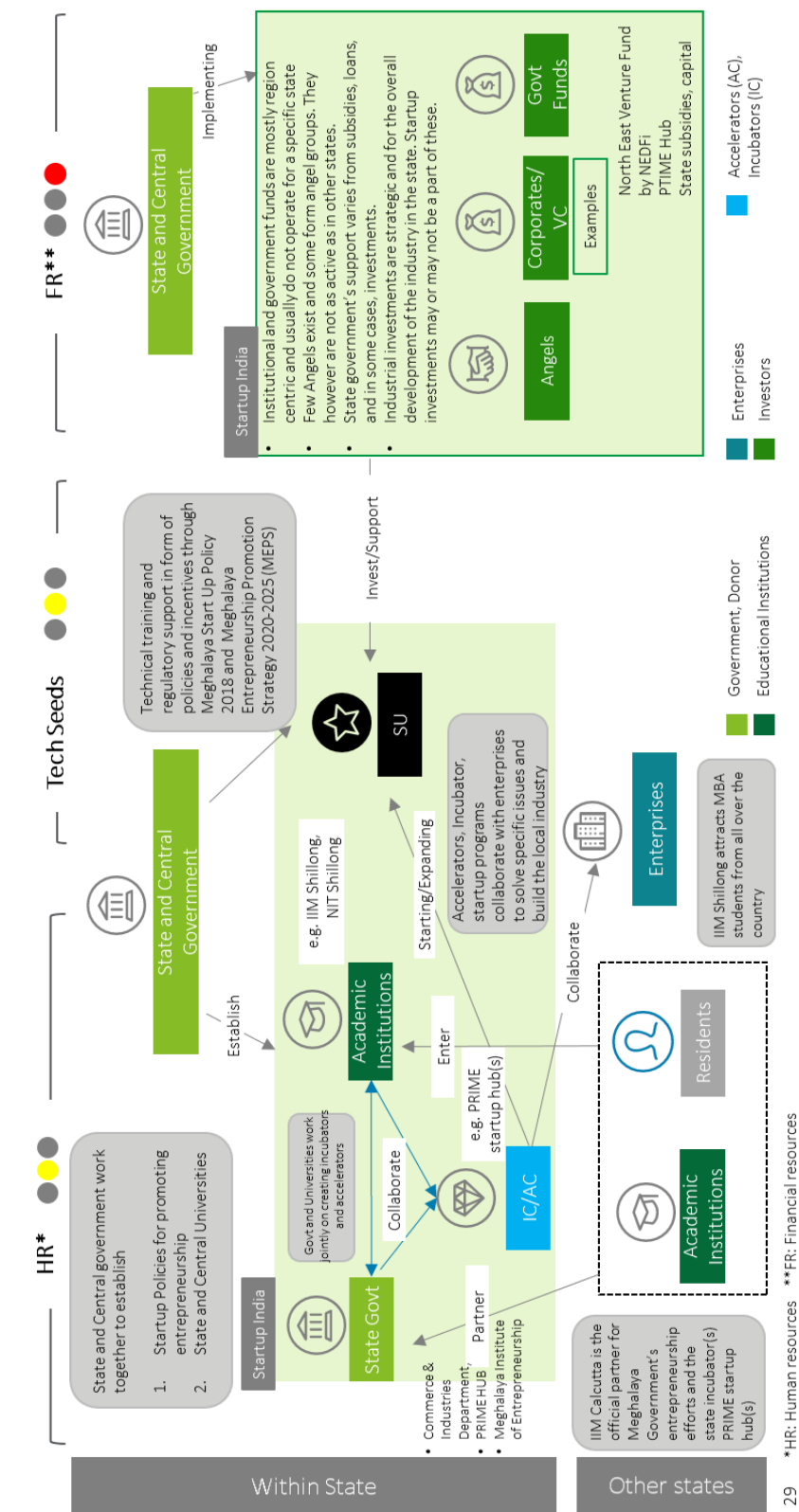


Figure 22: Bird's eye overview of the Meghalayan ecosystem

*HR: Human resources **FR: Financial resources

Salient Characteristics of the Ecosystem:

- Meghalaya did not place in Startup India Rankings even though it was in Category-Y.
- The Meghalaya Start-up Policy promotes the development of an online startup portal, startup innovation parks, and incubation centers in educational institutions.
- Presence of IIM Shillong in Meghalaya will continue to attract a variety of talent in the coming years.
- With support from IIM Calcutta, PRIME Startup Hubs by the Government of Meghalaya will strive to improve skill development, technology, market expansion, and finance.
- Since the state is endowed with natural resources, most of the entrepreneurs in the region operate natural-resources-based enterprises. Agriculture and horticulture are the major sectors due to the inherent advantage of geography, terrain, biodiversity and climate. Handicrafts, handlooms and weaving are secondary or tertiary in nature. As per the Meghalaya Institute of Entrepreneurship, some major challenges for startups are:
 - ✓ Physical and digital connectivity
 - ✓ The requirement of No Objection Certificates (NOCs) from various authorities acts as a deterrent for a lot of industries dealing in agro-products. This also leads to entrepreneurs struggling with scaling up of products
 - ✓ Absence of technology for refining and processing required to cater to the special needs of the NER which has an abundance of raw material and resources. For example, sectors such as food and agro processing require technology for harvest processing, packaging, freezing, and cold storage. Processing sector in the region is underdeveloped due to paucity of infrastructure facilities like poor connectivity with national and international market, inadequate supply chain and poor power supply.
 - ✓ Reluctance of people (especially in East Khasi hills) to avail institutional borrowings
- Recent initiatives hold potential and aim to improve the tech seeds and financial resources, but results will only be visible after the initiatives have been fully implemented.

3.4.2. Meghalaya Startup Policy

The policy's mission is to emerge as one of leading "Startup Hubs" in India by 2023 through strategic partnerships, conducive ecosystem, investment and policy interventions.

The policy emphasizes on the development of a startup portal and app which will aggregate all information related to the policy, its benefits, and the procedure to avail them.

The policy proposes the establishment of an innovation fund and a startup innovation park to foster research in information and communication technology, energy, tourism, etc.

The policy encourages educational institutions (operation of more than 5 years) to create a startup incubation ecosystem. The policy provides such institutions with a one-time grant of 75% of the capital cost (limited to INR 5 Crore) to set up incubation facilities.

Incentives	Description
GST Reimbursement	Startups shall be eligible for annual reimbursement of State GST paid in sales of goods for a period of 7 years subject to a maximum of INR 7 Lakh per startup per year.
Stamp Duty Reimbursement	Startups shall be eligible for 100 % reimbursement of stamp duty fee paid on the sale/lease deeds for first transaction.
Digital Upgradation Subsidy	Startups shall be eligible for digital upgradation subsidy of 50% of the capital expenditure for the purchase of computers, related hardware, purchase of relevant software subject to a ceiling of INR 2 Lakh per startup.
Lease Rental Reimbursement	Startups shall be eligible for reimbursement of lease rental subsidy of 50% for a period of 3 years subject to a ceiling of INR 2 Lakh per year per startup.
Power subsidy	Startups shall be eligible to power subsidy of 50 % subject to a maximum of INR 10 Lakh per annum for 5 years.
Reimbursement on patent filing cost	Startups shall be eligible for reimbursement of 100% of the actual costs (including filing fees, attorney fees, search fees, maintenance fees) for patent filing with a maximum limit of INR 2 Lakh for filing a domestic patent and up to INR 5 Lakh for filing an international patent.

Table 24: Incentives provided to startups under the Meghalaya Startup Policy¹³⁴

¹³⁴ https://miemeghalaya.org/wp-content/uploads/2020/11/Start-Up_Policy_Meghalaya.pdf

3.4.3. Meghalaya Entrepreneurship Promotion Strategy 2020-2025 (MEPS)

The mission of Meghalaya Entrepreneurship Promotion Strategy (MEPS) is to provide systematic and targeted support to aspiring entrepreneurs through a network of PRIME HUBs that will be the one-stop-shop for the different segments of entrepreneurs in the state.

The MEPS strategy is based on PRIME-Promotion and Incubation of Market-driven enterprises, which includes four key pillars and mentioned below:

Key pillars	Description
Skill	The state government will work with organizations that have worked on supply-side entrepreneurship development, for entrepreneurial training, mentoring, and domain expertise.
Technology	Technology will be a crucial driver for disseminating knowledge, increasing enterprise productivity and operational efficiencies. It will also be a key output in delivering enterprise action agenda.
Markets	The state government plans on understanding and building a strong demand-side network to support entrepreneurs while also building entrepreneur's ability to recognize and serve local demand.
Credit/Finance	The state government plans on creating solutions to reduce capital lending risk, reduce operational expenses of loan servicing and identify new approaches to access capital.

Table 25: Key pillars of the MEPS Strategy¹³⁵

To ensure that all aspects of enterprise building are available to entrepreneurs, The PRIME program plans on introducing 'PRIME HUBS', a one-stop-shop for providing end-to-end support to entrepreneurs, in collaboration with various departments.

According to the PRIME approach, each PRIME hub will include:

- **Enterprise Facilitation Center (EFC)** to provide the business know-how and support with making business plans.
- **Sectoral incubators** that will focus on enterprise building in specific sectors.
- **Rural technology park** that will have technologies both for demonstration and for actual use in value addition of various locally available raw materials. The Government of Meghalaya facilitates industry-government-academic collaboration through the MIE; wherein industry and academic linkages are utilised for skill development. MIE is currently in collaboration with Indian Institute of Entrepreneurship for skill development and capacity building trainings. Other institutions such as Institute of Rural Management Anand (IRMA) act as knowledge institutions/partners.

¹³⁵ <https://miemeghalaya.org/wp-content/uploads/2020/11/Meghalaya-Entrepreneurship-Promotion-Strategy-1.pdf> (pages 9, 16, 23/60)

MEPS classifies startups into three categories based on their size and number of people employed and applies different incubation approaches as follows:

	Startup Entrepreneurs	Nano Entrepreneurs	Livelihood Entrepreneurs
Classification Criteria	<ul style="list-style-type: none"> Employs or creates additional income for more than 20 people Area of coverage extends beyond a block or district 	<ul style="list-style-type: none"> Employs or creates additional income for 2 to 20 people Provides local resources for nearby markets 	<ul style="list-style-type: none"> Single entrepreneurs with a focus on productivity increases
Incubation Approach	<ul style="list-style-type: none"> Startup Entrepreneurs require high leverage support across various dimensions and hence will be incubated through the PRIME STARTUP HUBS in Shillong and Tura. The PRIME STARTUP HUBS provides mentorship and skill enhancement facilities via sector specialists. Moreover, at the PRIME STARTUP HUBS, venture capitalists and angel investors will be empaneled to provide significant opportunities to startups to raise funds. 	<ul style="list-style-type: none"> Nano Start-ups will be incubated at a district or block level PRIME HUB. Each PRIME HUB has a sectorial focus and supports entrepreneurs who predominantly work in the identified sectors. Each PRIME HUB will have three anchors to provide comprehensive support: <ul style="list-style-type: none"> A community anchor- a local NGO that has worked in Entrepreneurship. A credit anchor- a bank that has a local presence. A technology anchor that will provide the technical know-how and market knowledge. 	<ul style="list-style-type: none"> Livelihood entrepreneurs need input and output support to sustain and enable their activities. In this regard, facilitation of credit for them will be enabled by existing Self-Help Groups (SHGs), Integrated Village Cooperative Scheme (IVCS), and other collectives who will in turn receive support from Credit Anchors through PRIME HUBS.

Table 26: Categories of startups under MEPS

3.4.4. Contribution of Major Players

(A) Meghalaya Institute of Entrepreneurship (MIE)

The Meghalaya Institute of Entrepreneurship (MIE) is a key authority that promotes the development of MSMEs in the state. The MIE’s vision is to Incubate, design, and put in place an enterprise ecosystem that will foster the growth of private enterprise in the state.

The key objectives of the MIE include:

- To help and assist unemployed youth – educated and uneducated, urban and rural in acquiring skills for both wage and self-employment.
- To encourage and assist in setting up of enterprises by individuals focusing on first generation entrepreneurs through appropriate training, behavioral motivation, managerial competencies and selective technical skilling.
- Provide backend support to line departments and entrepreneurs through leveraging help/support and affiliations with institutions/organizations in carrying out training and other entrepreneurship development related activities.

The institute has several key partnerships including:

- National Dairy Development Board (NDDB)
- College of Veterinary Sciences, Assam Agricultural University (AAU), Khanapara
- Indian Institute of Hotel Management (IIHM), Shillong

(B) Incubation and Enterprise Support Centre (IESC) at IIM Shillong

The Incubation and Enterprise Center, Indian Institute of Management Shillong aims at promoting entrepreneurship in the NER of India either through converting the noble research idea into an economic unit or adding value to the existing product or service.

The primary role of the Centre is to create a conducive environment for startups/incubatees, as well as mentoring them. It will serve to nurture and guide entrepreneurial initiatives with social and/or commercial objectives. The Centre will also provide other facilities which will include consulting, networking and administrative.

The Centre provides mentoring to its startups for formulating business plan, product development, business development, team-building, fund-raising, fund management, and marketing.

The Centre support 15 SUs currently and individual staff of the Centre supports a few more.

It is noted the Centre does not have formal cooperation with NEDFi or any other financiers, such as banks, VC, angel investors.

With regards to physical infrastructure of the IESC, it was commented the hub for incubation and startups is quite small in comparison to other IITs and IIMs. Specifically, physical infrastructure needed for a startup hub include:

- High speed internet
- R&D facility
- Physical space for meetings and conferences.

To have a broad idea of student pool, the number of students of MBA courses at IIM-S are as follows:

- PGP program/ Post Graduate program for MBA – the number of participants is 280 students per year
- Executive MBA – the number of participants is 30 students per year
- Weekend MBA program – the number of participants is 50 students per year

Therefore, in total the institution has 360 students per year.

3.5. Mizoram State

3.5.1. Characteristics of the Ecosystem

The Government of Mizoram has undertaken outreach and training initiatives to promote the culture of entrepreneurship in the state.

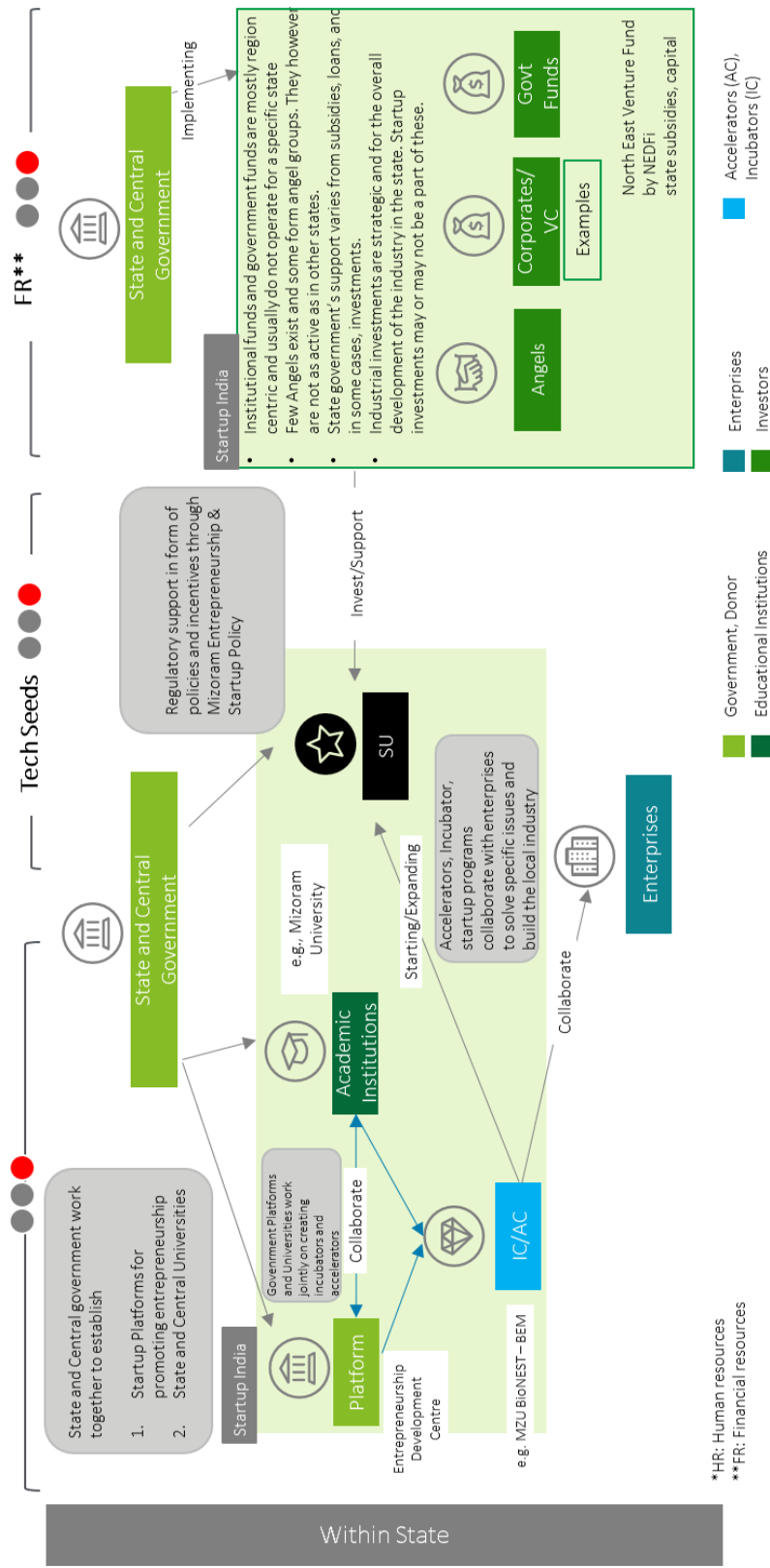


Figure 23: Bird's eye overview of the Mizoram ecosystem

Salient Characteristics of the Ecosystem:

- Mizoram placed as an “Emerging Startup Ecosystem” in Startup India Rankings in Category-Y due to government outreach to promote entrepreneurship.
- Mizoram particularly scored low in ease of doing business.
- To improve, Mizoram Entrepreneurship & Startup Policy, 2019 has been framed in a way which is easy to understand and promotes ease of doing business.
- Entrepreneurship Development Centre under the Planning and Program Implementation Department is the core organization responsible for catalyzing entrepreneurship.
- While the Mizoram Entrepreneurship & Startup Policy, 2019 places an important focus on outreach and awareness, incubation facilities, universities and technological infrastructure are pivotal in future policies to build the ecosystem.

According to an interview with NIT Mizoram, other challenges affecting industrial promotion in the state include:

- Skill set: Need for capacity building and skill development for technological and business development.
- Transportation: Poor connectivity has led to poor logistics and subsequently less business development opportunities.
- Innovation: Innovation for traditional technology has been lagging (especially in the agriculture sector).
- Policy mandating local ownership: Any industry in the region legally requires registration of a person from the state as one of owners. This has also limited growth of business in the region.
- Access to Finance: Poor presence of venture capitalists and funding agencies to finance startups/entrepreneurs in the NER.

3.5.2. Mizoram Entrepreneurship & Startup Policy, 2019

The Policy was formulated in 2019 for the state to become industrially and technologically more competitive in the NER region through development of its ecosystem. Objectives of the Policy are:

- Use of Mizo language to publish manuals and literature on entrepreneurship to ensure better connect.
- Establish “Mizoram Outstanding Entrepreneurs Award” to promote entrepreneurship.

- Conduct workshops and study tours for up-skilling and mentoring through master training program.
- Building of institutions to support, setting up incubation centers, assisting partner agencies on need basis to promote entrepreneurship development.
- Promoting ease of doing business through regulatory frameworks and providing micro finance through various outreach events.

The scope of the policy covers:

Trainings, grants, and facilities which are not covered under the Government of India policy such as Startup India or any other policies that existed prior to the current one.

The following are some of the initiatives implemented under the policy:

Initiative	Description
Awareness Programs	Promote entrepreneurship through local cable televisions and outreach program will take place in districts in the first phase and then in villages in subsequent phases. NGO's will also be provided grants of up to INR 25,000 for a minimum audience of 300 person to organize awareness initiatives.
Entrepreneurial Events	Public issues will be identified, and solutions will be invited through webinars, startup campaigns, grand challenges and hackathons. Creating networking focus through B to B and Business to Government (B to G) initiatives through industry collaboration.
Mizoram Outstanding Entrepreneurs Award	Award seeks representation from all sectors and the winners are provided with a cash reward of INR 50,000. The 2019 awards show saw 3 winners and 2 lifetime achievement awards.

Table 27: Initiatives offered in the Mizoram Ecosystem¹³⁶

3.5.3. Contribution of Major Players

(A) Entrepreneurship Development Center (EDC)

(a) Vision

The Entrepreneurship Development Center wants to become a catalyst in facilitating the emergence of competent group of entrepreneurs and become a hand holding support for

¹³⁶ https://www.startupindia.gov.in/content/dam/invest-india/Templates/public/state_startup_policies/mizoram-entrepreneurship-statup-policy-2019.pdf.

entrepreneurs through entrepreneurship education, trainings, consultation meetings, workshops, mentoring and to educate the youth of the state on various opportunities beyond the public sector.

(b) Key Initiatives

The EDC was set up through Mizoram State Entrepreneurship Development and Monitoring Committee (MEDMOC). MEDMOC came into existence on 25.2.2016 and the EDC is funded by Entrepreneurship Development Scheme which was set up on 18.1.2017.

The EDC offers workshops, mentoring, education, and training programmers to create an effective ecosystem in the state.

(c) Incentives offered

- **Master Training Program** – It will be entrepreneur trainer training program and will help in facilitating startups through tie-ups with international and national institutes. There are 20 master trainers at present in Mizoram.
- **Skill Development Program:** Training in the area of construction and accounting and financial management has been conducted so far. 30 candidates had successfully completed the training in 2019.
- **Research Funding and Study Tours** – INR 10 Lakhs will be provided for conducting research in different business opportunities, analyzing Mizoram market economy etc. in collaboration with different partners.

(d) Achievements

- **Mizoram Rahbi** – It is a startup competition for early-stage entrepreneurs who present their business proposals, and the winners receive a specific grant from the state government. The grant will be for a sum of maximum of INR 5 Lakhs or half of the costs estimated for business proposal, whichever is lower.
- **Mizoram Kailawn** – It is a business plan contest which includes a road show to all districts and a residential bootcamp for 4 days.
- **Acceleration Program** – Through the initiative, startups will get seed investment, mentorship, and networking opportunities. Assistance will also be provided in provision of co-working spaces, and logistical support if needed. MEDMOC in association with Indian Institute of Calcutta Innovation Park has launched an accelerator program through Mizoram Kailawn to select startups in revenue stage. More details can be accessed here.

(e) Impact

- EDCs have been able to fund 57 startups (Economic Survey 2018-19) amounting to INR 241.08 Lakhs and supported 103 startups, 56 seed funded startups, and 3 incubators.

(B) Mizoram University

(a) Outline of School

The University was established on 2.7.2001. It offers programs in 9 different areas. The university is accredited 'A' grade by National Assessment and Accreditation Council (NAAC) in 2019 and is ranked amongst the top 100 universities in India by NIRF. It has 35 affiliated colleges.

(b) Support programs for Entrepreneurs

- Yunus Social Business Center (for the practice of social business and ideas)
- An incubator for biotechnology initiatives
- A technology Enablement center that assists tech transfer to MSMEs
- Set up Intellectual Property Rights cell for innovation

(C) Institute of Chartered Financial Analysts of India (ICFAI) University Mizoram

(a) Outline of School

- The university was established on 19.10.2006. The flagship courses and trainings are in areas of management and finance. It is a member of the Association of Commonwealth Universities, London and a member of the Association of Indian Universities, New Delhi.

(b) Support programs for Entrepreneurs

- Regular seminars on entrepreneurship through the management department of Mizoram
- Industry academia partnership through seminars, guest lectures etc.

(c) Incubator programs

- None

(D) Department of Biotechnology (DBT) BioNEST Incubator

(a) Outline of institution

- It is an incubator under Mizoram University and is a biotechnology incubator to assist startups in accelerating development and commercialization of new technologies by providing incubator space and state of the art "Plug & Play" laboratories.

(b) Support programs for Entrepreneurs

- Initiate, expand and deepen the incubation service and related social entrepreneurship initiatives in the area of environmental and biological sciences, community based rural livelihood resources at Mizoram University.

- Creation of state-of-art infrastructure and intellectual resources, Intellectual Property Rights (IPR) and social entrepreneurship environment for budding entrepreneurs.
- Provide training programs in emerging technologies for incubates.
- Open to all startups with focus on life sciences and allied fields. Mizoram University Bio-Incubator Nurturing Entrepreneurship for Scaling Technology (MZUBioNEST) also encourages participation from self-help groups (SHG), community-based organizations, civil society organizations and cooperative societies. However, preference will be given to startups having affiliation with Mizoram University.

3.6. Nagaland State

3.6.1. Characteristics of the Ecosystem

Platform, policies, and efforts of the Government of Nagaland to promote entrepreneurship have been recognized by Startup India, but no incubators exist to take advantage of this favorable regulatory environment.

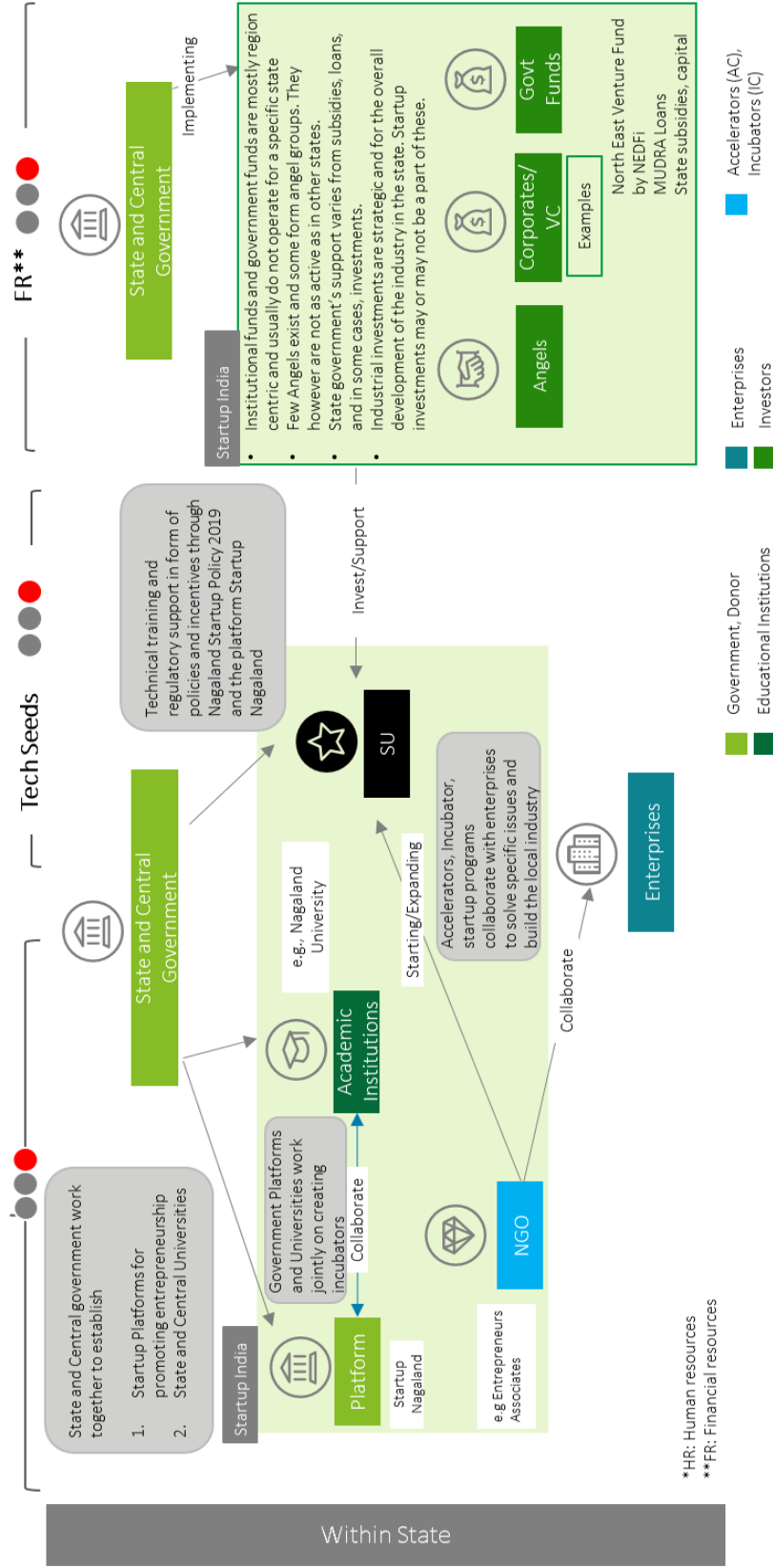


Figure 24: Bird's eye overview of the Nagaland ecosystem

Salient Characteristics of the Ecosystem:

- Nagaland placed as an “Aspiring Leader” in the Startup India Rankings in Category-Y due to robust startup cell and assistance for IP advisory.
- State startup portal is Startup Nagaland. It is a highly interactive platform created to initiate seamless registration of startups with the Government of Nagaland.
- Nagaland Startup Policy 2019 places a special focus on young and women entrepreneurs, setting up a fund of fund, and a world class incubator through public private partnership.
- Nagaland is working to establish incubators by collaborating with universities, but none exist now.
- Entrepreneurs Associates is an NGO working to promote entrepreneurship and develop sustainable livelihoods in Nagaland.

As per an interview with the Industries Department of the Government of Nagaland, the state has been lagging behind in spite of industrial promotion initiatives due to several reasons including:

- Geographical reasons: Since Nagaland is landlocked and connectivity is limited, it limits the opportunities for industrial promotion in the state.
- Transfer of land/ Land ownership: According to the constitution, land ownership is limited to the indigenous inhabitants of the land making it difficult for external investors to start business in the state. However, the Government of Nagaland is working on this issue.
- Lack of financial support: The State does not have presence of venture capitalists or angel funds, making it difficult for businesses to access credit.
- Poor infrastructure: Unreliable power supply and poor road connectivity have hindered industrial development in the state
- Lack of financial resources for startup: Most of the resources are directed towards capital intensive infrastructure such as roads, bridges, etc., while the startup initiatives take a backseat. At present, approximately INR 20-25 Lakhs are required per year for the innovation hub, INR 10 Lakhs per year for the education development centers, amongst other expenses. The Government of Nagaland is providing the same for the financial year 2020-2021. However, these are bare minimum requirements and more resources are required for scaling up the respective activities further.

3.6.2. Nagaland Start-Up Policy 2019

The Government of Nagaland developed Nagaland Start-Up Policy 2019 with an aim to accelerate and promote local entrepreneurs. The nodal agency to implement the Start-Up Policy in the state is Department of Industry and Commerce, Nagaland.

Policy / Scheme	Description
Nagaland Start-Up Policy 2019	<p>Vision: To establish Nagaland as a model startup leader in the region, by creating a culture of entrepreneurship that nurtures creative and innovative youth, allowing them to build successful startup companies, become job creators and contribute towards building a healthy and sustainable economy</p> <p>Objectives:</p> <ul style="list-style-type: none"> • Facilitate the growth of at least 500 startups in the next 5 years, with a focus on establishing innovative “Made in Nagaland” products and services • Establish a world-class state incubator in partnership with global leaders on a PPP mode. And mobilize funding for investment in startups through various interventions, including establishing a funds of funds • Policy Pillars: The policy strategy is based on the following 4 pillars. <ul style="list-style-type: none"> ✓ Develop a culture of innovation and entrepreneurship focused on rural and social enterprises ✓ Focus on creating sustainable business models by helping create and develop business, supply chains, and financial linkages ✓ Developing human capital, by creating the right environment and support system for innovative learning and experimentation at an early stage ✓ Proactively engage with industry to promote and identify innovation
Startup Nagaland Lockdown Challenge	<ul style="list-style-type: none"> • In 2020, the Department of Industry and Commerce organized a lockdown challenge to promote innovation across various sectors. • Some of the key sectors under the challenge were: public health, zero contact public transportation, and development of technology solution to avoid spread of COVID-19.
Startup Bootcamps in districts 2019-20	<ul style="list-style-type: none"> • The Department of Industry and Commerce organized 4 startup bootcamps across the state, namely: Startup Bootcamp in Phek, Mokokchung, Tuensang, Wokha

Table 28: Policies and initiatives of the Nagaland ecosystem¹³⁷

Incentives offered to startups	Description
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¹³⁷ <https://startup.nagaland.gov.in/downloads>

GST Reimbursement	Startups shall be eligible for annual reimbursement of State GST paid in sales of goods for a period of 3 years subject to a maximum of INR 5 Lakh per startup per year
Stamp Duty Reimbursement	Startups under this policy shall be eligible for 100% reimbursement of stamp duty/ registration fee for first transaction
Digital Upgradation Subsidy	Startups shall be eligible for digital upgradation subsidy of 50% of the capital expenditure for the purchase of computers, related hardware, purchase of relevant software subject to a ceiling of INR 5 Lakh per startup
Broadband Connectivity Reimbursement	Startups selected under this policy shall be eligible for 50% rental reimbursement for a maximum period of two years subject to a ceiling of INR 2 Lakhs. (It may include any rent being paid to an incubator/co-working space.)
Power subsidy	Startups shall be eligible for power subsidy of 50% subject to a limit of INR 10 Lakhs per annum for a period of 5 years
Reimbursement of Patent Filing Cost	Startups shall be eligible for reimbursement up to 100% of the actual cost (including filing fees, attorney fees, search fees, maintenance fees) for patent filing with a maximum limit of INR 2 Lakhs for filing domestic patent and up to INR 5 Lakhs for filing international patent
Market & Promotion Assistance	Startups shall be eligible for reimbursement of 50% of the actual marketing and promotion costs (including travel costs) incurred by a Startup subject to maximum of INR 5 Lakhs per startup.
Procurement by the State Government	The Government of Nagaland will encourage participation of startups in public procurement by waiving off prior experience or turnover requirements so long as the product meets the desired specifications. The state government will also encourage consortium of eligible companies with startups in bidding for state government projects.

Table 29: Policy incentives for Nagaland startups under Start-up Nagaland¹³⁸

(A) Start-Up Nagaland 2019: Key Policy Incentives for incubators

In addition to incentives offered to startups, the policy also facilitates the setting up and operation of startup incubators by providing the following incentives :

Incentives offered to Incubators / Incubatees	Description
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¹³⁸ <https://startup.nagaland.gov.in/downloads>

Seed Grant	A Seed Grant up to INR 10 Lakhs per startup shall be provided to each incubatee for validation of the idea, prototype development, and assistance towards traveling costs and carrying out field/ market research/ skill training/ marketing and initial activities to set up a startup depending on the nature of the project.
Other financial incentives	<ul style="list-style-type: none"> • The Government of Nagaland shall provide financial assistance up to INR 25 Lakhs as a capital grant to the incubator. • Reimbursement cost of incubating a startup maximum up to INR 2 Lakhs per incubatee to government recognized private/state supported incubators • Provision of reimbursement of 25% of lease rental subsidy to startup units established in the state. Units operating from Incubators shall be eligible for a period of 3 years subject to the ceiling of INR3 Lakhs per year from the date of rent payment • To provide mentorship by industry leaders, eligible incubators shall be provided mentoring assistance support on a reimbursement basis up to a limit of INR 1 Lakh per year for a period of 3 years • To promote innovation and mobilize students into entrepreneurship as a career option, an incubator shall be encouraged to organize annual startup competition challenges and shall provide assistance up to a limit of INR 2 Lakh per event

Table 30: Incentives offered to Nagaland incubators under Startup Nagaland 2019

As per an interview with the Industries Department, the Government of Nagaland - Despite the presence of the policy, the startup initiative at the state level is at a nascent stage and requires a lot of support with respect to venture capital fund/angel funds; since the state does not have big industrialists or businessmen who have the capacity to support and promote startups.

Under the startup scheme, the Government of Nagaland is trying to provide support to entrepreneurs in line with the Startup India policy. At present, approximately 17 to 18 startups have been identified, registered and are in the negotiation stage.

The Government of Nagaland is also in the process to revise the State Industrial Policy and streamline the ease of business ecosystem by providing single window initiative for issuing license.

According to the Policy, the Government of Nagaland identified three key players for development of an incubation centre under Public Private Partnership mode. At present, they are at a nascent stage and the Government of Nagaland is working on making it functional in terms of manpower, infrastructure and equipment.

3.6.3. Contribution of Major Players

(A) Nagaland Tool Room & Training Centre

The Nagaland Tool Room & Training Centre is a Government of Nagaland society and an ISO 9001:2015(QMS) certified center, established under the Directorate of Industries and Commerce.

The Centre offers multi-sector services to the industries and entrepreneurs for the industrial growth in the NER. It also provides entrepreneurs with specialized trainings and assists them with technology development.

It launched the agro-based Rural Technology & Incubation Centre in August 2020.

(B) Entrepreneurs Associates (EA)

Entrepreneurs Associates (EA) is an NGO firm that offers incubation support to startups in Nagaland. It has a hybrid model providing a continuum of services to foster a vibrant entrepreneurship ecosystem in Nagaland, and the NER. EA continues to respond to and counter the root obstacles for entrepreneurship through self-awareness and education, knowledge, access to finance, among others.

The work of EA can be broadly classified into incubation, ecosystem building, and advocacy all working strategically to fulfill the mission and vision of EA.

(a) Support programs for Entrepreneurs

There are two support programs offered by EA:

- **BASIC ENTREPRENEURIAL SKILLS TRAINING** is a rigorous program on entrepreneurship for startups and aspiring entrepreneurs; and aspires to create Feast of Merit Entrepreneurs (FOME). FOME is a concept developed by EA based on the Naga tradition of feast of merit, where an individual who acquires wealth shares it back with his community.
- **BASIC BUSINESS SKILLS TRAINING** is a training program designed for entrepreneurs who have little, or no education. EA conducts Basic Business Skills Training (BBST) with the primary focus to instill foundation of business and streamline entrepreneurial ventures.

3.7. Sikkim State

3.7.1. Characteristics of the Ecosystem

Sikkim has laid down the seeds to build an organized ecosystem through Sikkim Entrepreneurship and Economic Development (SEED) to formalize ecosystem development, and it will be a while before the results and impact can be observed.

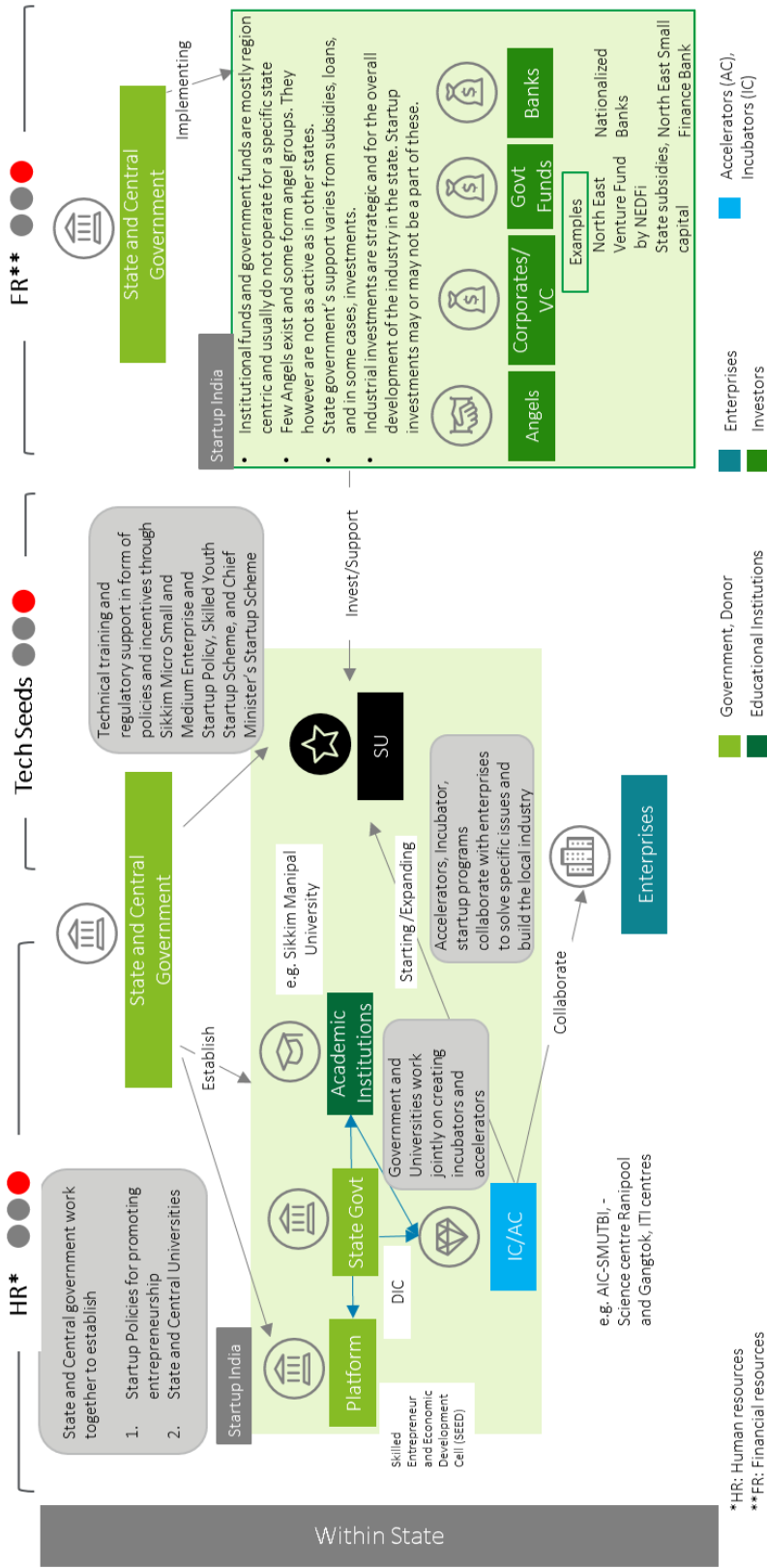


Figure 25: Bird's eye overview of the Sikkim ecosystem

Salient Characteristics of the Ecosystem:

- Sikkim is placed as an "Emerging Startup Ecosystem" Startup India Rankings in Category-Y due to strong institutional support and government outreach.
- MSME and Startup Policy of the Government of Sikkim is attempting to build startup culture by raising awareness and imparting technology support to established MSMEs.
- The Directorate of Industries helps in establishing industries, imparting training to local youths, setting up training centers for young entrepreneurs.
- Sikkim Manipal University, a private university, has established the first Atal Incubation Mission in NER with stellar facilities and partnerships with private sectors.
- Establishment of SEED in 2020 will foster and direct the overall development of the ecosystem.
- As per the Commerce and Industries Department of the Government of Sikkim, the major challenges in the development of the ecosystem includes:
 - ✓ Lack of enhanced financial assistance, hands on training, field exposures, skill upgradation, marketing assistance and linkages.
 - ✓ Need to develop model/pilot MSMEs to demonstrate running of successful enterprises in various fields/ sectors
 - ✓ Lack of comprehensive incubation facilities.
 - ✓ Lack of complete training facilities for startups and micro enterprises.
 - ✓ Lack of single window system for addressing the issues of startups/ micro enterprises.
 - ✓ Absence of flexible financial assistance for startups and MSMEs to scale their business
 - ✓ Absence of a strong marketing network and market access for startups and micro enterprises

Directorate of Industries

The Government of Sikkim established Directorate of Industries in 1977 with an aim to promote and develop industries in the state.

The Directorate helps in establishing industries, imparting training to local youths, setting up training centers and aiding the budding entrepreneurs with a view of creating job opportunities for the people.

One of the focus areas of the Department of Industries and Commerce is to promote and develop the rural, micro, small and medium enterprises. The state government is taking

various initiatives such as creating an ease of doing business portal, providing financial and mentoring assistance to support entrepreneurship.

3.7.2. Sikkim Micro Small and Medium Enterprises and Startup Policy, 2019 (Draft Policy)

The directorate is trying to develop a startup culture in the state by providing benefits to the startups under **the Sikkim Micro Small and Medium Enterprises and Startup Policy** of the state with an aim to:

- Promotion and development of entrepreneurship within the state through creating awareness and exposure.
- Assisting individuals by providing skill development training, funding access, subsidies and marketing assistance to ensure that the individual are capable of sustaining and growing.
- Encourage established MSMEs and startups to upscale their business and grow nationally and internationally.
- Providing technology and incubation support to all MSMEs and startups.¹³⁹

(A) Support programs for startups

Scheme	Description
Chief Minister's Startup Scheme (CMSS)	<p>The scheme was formulated in 2017 by the Department of Commerce and Industries.</p> <ul style="list-style-type: none"> • The scheme aims to boost the entrepreneurial spirit of the local unemployed population of state by providing a platform for transforming ideas into viable startup ventures in all the sectors. • The scheme provides a 25% financial assistance subsidy to all manufacturing startups and 35% to all non-manufacturing startups having a maximum project cost of INR 20 Lakhs. • The Chief Minister's Start-up Scheme has been replaced with Skilled Youth Start-up Scheme.
Skilled Youth Startup Scheme (SYSS)	<ul style="list-style-type: none"> • The scheme was formulated in 2020 by Department of Commerce and Industries. • The scheme aims to generate equitable entrepreneur opportunities in rural and urban areas of the state, mainly for the educated unemployed youths by assisting in setting up an enterprise. • The scheme provides loan assistance and financial subsidy at 50% for below poverty line and 35% for others. • After the selection of beneficiaries, 5-day training will be conducted by government training institutes under Entrepreneur Development Training Program. The training is mandatory before releasing loan by the banks.

¹³⁹ https://www.startupindia.gov.in/srf/reports/Sikkim_State_Report_26072020.pdf

	<ul style="list-style-type: none"> At present, the scheme needs more support in terms of enhanced subsidies, incubation facilities, confidence building measures, processing unit space, marketing support and upscaling the business and national and Global outreach.
Skilled Entrepreneur and Economic Development Cell (SEED)	<ul style="list-style-type: none"> The cell was inaugurated in December 2020 by Department of Commerce and Industries. During the inauguration, the Chief Minister (CM) felicitated 35 major hard-working local entrepreneurs in the state by showcasing their journeys to serve as inspiration for others. The SEED cell aims to bridge the gap between the entrepreneurs and government bodies by creating an overall network for the development of entrepreneurship in Sikkim.

Table 31: Schemes for startups in the Sikkim Ecosystem¹⁴⁰¹⁴¹

(B) Incentive Schemes for MSMEs and startups

(a) Sikkim Micro Small and Medium Enterprises and Startup Policy, 2019: Incentives

Sikkim Micro Small and Medium Enterprises and Startup Policy, 2019: Incentives	
Reimbursement	<ul style="list-style-type: none"> Reimbursement of 50% stamp duty and transfer duty paid on purchase or lease of land and buildings. Reimbursement of 50% training incubation fee. Reimbursement of up to 70% state goods and service tax.
Financial assistance	<ul style="list-style-type: none"> Financial assistance up to INR 1 Crore for common infrastructural facilities. Seed capital assistance at 20% of the machinery cost for new enterprises
Subsidy	Up to 20% subsidy on fixed capital investment for plants, machinery, equipment with a ceiling limit of INR 50 Lakhs.
Research and development	Providing R&D to upscale or modernize startups through national level institutes.

Table 32: Incentives offered to MSMEs and startups in Sikkim¹⁴²¹⁴³

(b) Sikkim Industrial Promotion and Incentive Act, 2000

Sikkim Industrial Promotion and Incentive Act, 2000	
Working capital subsidy	14% subsidy on interest payable by the industrial unit on working capital loan to a maximum of INR 50,000.

140 <https://northsikkim.nic.in/schemes/>

141 <https://northeastnation.in/sikkim-entrepreneurship-and-economic-development-cell-established/>

142 <https://msmedi-agartala.nic.in/progress.html>

143 <http://bareactslive.com/SIK/sik003.htm>

Capital investment subsidy	<ul style="list-style-type: none"> • 10% of total capital investment in plant and machinery, subject to a maximum of INR 5 Lakhs for existing units. • 10% of total capital investment in plant and machinery subject to a maximum of INR 10 Lakhs for new units set up by local entrepreneurs.
Price preference	100% re-imburement of power bill consuming up to of INR 50,000, 30% subsidy for industrial units set up in Growth Center and 50% cost incurred on linking of power to the factory with a maximum of INR 50,000.

Table 33: Subsidies available under the Sikkim Industrial Promotion and Incentive Act, 2000

According to an interview with the Commerce and Industries Department, there are several challenges for the implementation of the policy, strengthening the institutions, and promoting financial incentives:

- Availability of government land is a major constraint, leading to difficulties in availing the schemes of the Government of India for MSME based infrastructures/facilities. Only private land is available for creation of infrastructure.
- The MSME Division needs to be strengthened to deal with the development of the overall aspects of MSME and ecosystem in Sikkim.
- Better financial packages need to be introduced to MSMEs in Sikkim to avail the benefits proactively.
- More incentives, subsidies and infrastructure facilities and facilitation need to be provided to attract FDI/private investments in Sikkim.

3.7.3. Contribution of Major Players

(A) Department of Commerce and Industries (DIC)

The Government of Sikkim established the Directorate of Industries in 1977 with an aim to promote and develop industries in the state.

In 2003, the Directorate was converted to Department of Commerce and Industries focusing to bring rapid industrialization in the state by bringing national and international companies to the state through subsidies and incentives.

The main objective was to overcome the growing problem of unemployment and compete with the other states in the country.

The Department helps in establishing industries, imparting training to local youth, setting up training centers and aiding the budding entrepreneurs with a view of creating job opportunities for the people.

To promote and develop the rural, micro, small and medium enterprises. The state government is taking various initiatives such as creating an ease of doing business portal, providing financial and mentoring assistance to support entrepreneurship.

It is also the governing body of Sikkim MSME and Startup Policy, 2019.

District Industry Centers and Growth Center were developed by the Department in three areas in the state to develop investment avenues and create employment opportunities:

Center	Description	Facilities/ Schemes/ Programs
Growth Center	The Ministry of Commerce and Industry, GoI approved the establishment of Growth Center at Samlik, Marchak and Namli.	<ul style="list-style-type: none"> • Basic Infrastructure such as water, power, safety • Plots on lease to establish industrial units
District Industry Center: East and North Districts	The center in Gangtok covers East and North districts and was established in 1986 to provide services that will create sustainable employment avenues for the people of two districts.	<ul style="list-style-type: none"> • Training to Rural Artisans Scheme • Financial Assistance • Marketing Assistance
District Industry Center: West and South Districts	The other center was set up in 1978 at Jorethang covering South and West districts of the state. It provides support services to people for industrial growth and self -employment ventures.	<ul style="list-style-type: none"> • Entrepreneurship Development Program • Financial Assistance • Marketing Assistance

Table 34: District Industry Centers and Growth Centers established by DIC

(B) Skilled Entrepreneur and Economic Development Cell (SEED)

The cell was inaugurated in December 2020 by Department of Commerce and Industries.

During the inauguration, the Chief Minister felicitated 35 major hard-working local entrepreneurs in the state by showcasing their journeys to serve as inspiration for others.

The SEED cell aims to bridge the gap between the entrepreneurs and government bodies by creating an overall network for the development of entrepreneurship in Sikkim.

Sikkim

Sikkim starts SEED initiative for entrepreneurs

SEED encompasses entrepreneurs who are like-minded and committed in the creation of an ecosystem for the individuals who want to enhance capacities, ideas and potential and aims to improve the economy.



Sikkim CM PS Tamang launches the magazine and App of SEED TNT Photos

Figure 26: Launch of SEED Platform

“Our government has decided to provide all opportunities and platform to the locals first. We will support the local entrepreneurs and plan to make necessary amendments in rules and norms laid down by the departments. The objective is to provide ease of doing business for our local youth in their chosen fields. The government has commenced on promotion of local entrepreneurs with the establishment of SEED cell”

- Chief Minister of Sikkim, P.S. Golay¹⁴⁴

(C) Atal Incubation Centre Sikkim Manipal University Technology Business Incubation Foundation (AIC-SMUTBI) at Sikkim Manipal University

AIC-SMU Technology Business Incubation Foundation (AIC-SMUTBI) was set up as one of the 100 world-class incubators envisioned by the Atal Innovation Mission, NITI Aayog of the Government of India in September 2018.¹⁴⁵ It is the first Atal Incubation Centre in the NER.

144 <https://www.thenortheasttoday.com/current-affairs/states/sikkim/sikkim-starts-seed-initiative-for-entrepreneurs#:~:text=This%20Scheme%20is%20envisioned%20to,the%20beneficiaries%20under%20the%20Below>
145 <https://www.smutbi.com/>

AIC-SMUTBI persistently encourage young entrepreneurs to hone their skills in generating valued human resources rather than the traditional manpower that feeds need of the industry. They admit young entrepreneurs with innovative ideas that have market potential by mentoring them to become employers rather than being employees until they graduate from this incubation center after a gestation period of approximately 2 years.¹⁴⁶

(a) Services Offered:

The department is trying to develop a startup culture in the state by providing benefits to the startups under **the Sikkim Micro Small and Medium Enterprises and Startup Policy** of the state with an aim to:

- Coworking: Incubation and co-working space in the Incubator comes with state of the art labs and environment
- Funding: Up to INR 25 Lakh
- Internship/Jobs: Side jobs to ensure sustenance
- Access to VC network: access to VCs and angel investors for scaled funding
- Mentorship from global mentors from India, Singapore and Silicon Valley
- Partnered services with accounting/legal firms
- Consulting: partnerships with corporates to pilot in house startups
- Branding: marketing and supporting the branding of the startup
- Labs: Arcylic cutting machine, 3D Printer, 3D Scanner, Laser cutting machine, Soldering kit, Vinyl plotter, Welding machine

The incubator also has key partnerships with several industry players: Amazon, Google Cloud, Microsoft for Startups, Zoho Corporation, Intuit Circle, Freshworks, Hubspot, PayTM, Razorpay, Hurree, Startup India, Wadhvani Foundation, Bill and Melinda Gates Foundation.

(b) Portfolio Companies:

The incubator is sector agnostic and currently has 32 startups in its portfolio working in various domains including Space and Aeronautics, FinTech, Agritech, Tourism, Media-Tech, Fast Moving Consumer Goods (FMCG), Health and Wellness. Examples of the portfolio companies include:

- **Nibiaa Devices:** Nibiaa Devices is currently working on Internet of things (IoT) and Artificial Intelligence (AI) based precision agriculture solution specially focused on tea gardens initially.
- **Yonika Infotainment Private Limited:** Yonika Infotainment Private Limited is a digital media company running “Sikkim Chronicle” a digital platform which has 166 thousand followers on Facebook and has almost 2.1 million post reach per

¹⁴⁶ <https://www.smutbi.com/>

month, 1.9 million post engagements per month. On Instagram it has around 25 thousand followers and on YouTube is 46 thousand subscribers.

3.8. Tripura State

3.8.1. Characteristics of Ecosystem

Tripura's nascent incubation centers will require support and incentives from the state government along with private and venture investment to fully realize their potential.

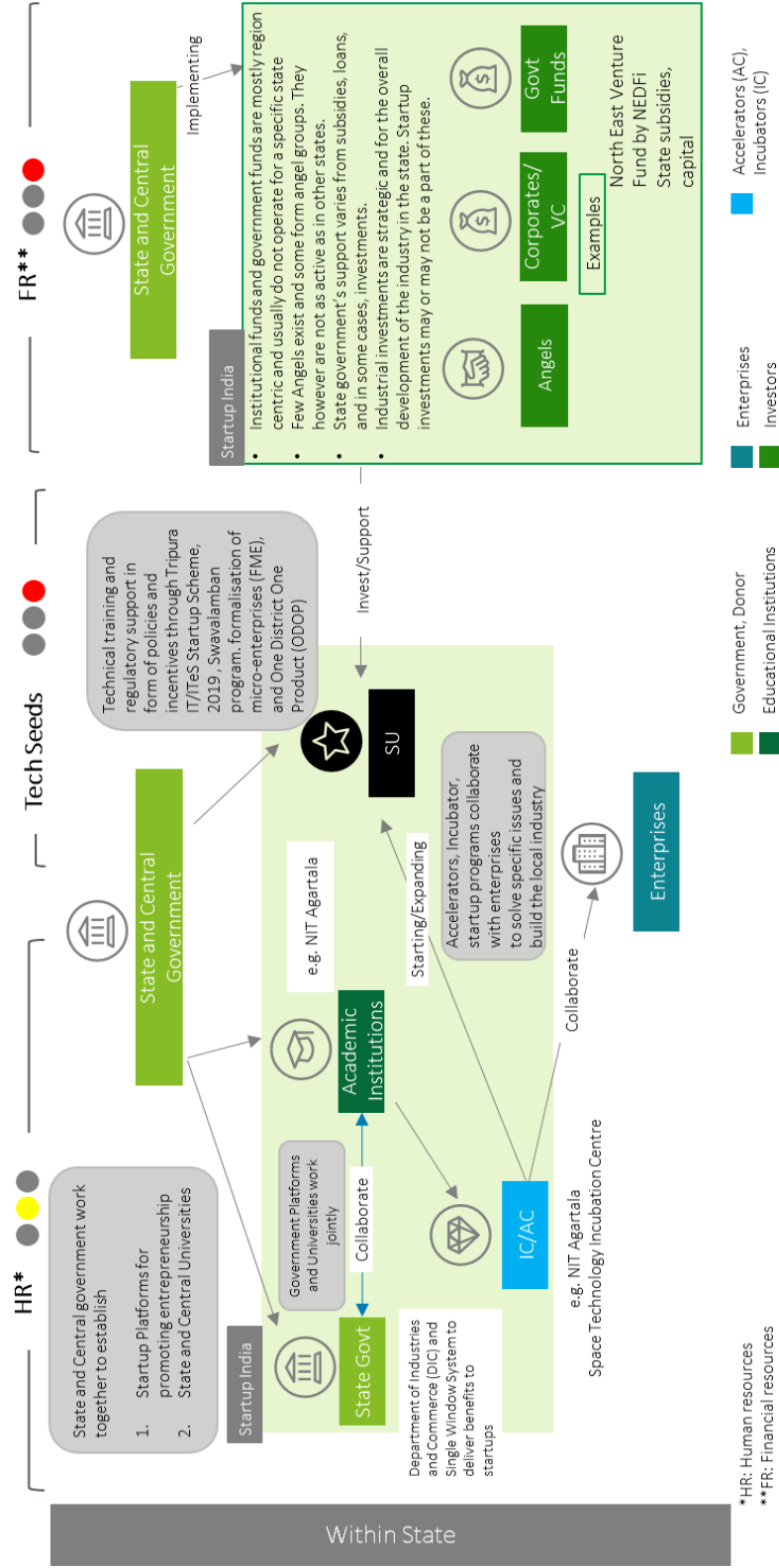


Figure 27: Bird's eye overview of the Tripura ecosystem

Salient Characteristics of the Ecosystem:

- Tripura did not place in Startup India Rankings even though it was in Category-Y.
- Tripura's first business incubation center was opened in Tripura University in February 2020 with a fund of INR 1 Crore to promote the startup culture in the state.
- The first Space Technology Incubation Centre of Indian Space Research Organisation (ISRO), India's national space agency, was established at NIT Agartala in 2018
- Tripura's IT/ITeS Startup Scheme, provides necessary technical and digital infrastructure for startups to operate.
- As per the the Department of Commerce and Industries of the Governemnt of Tripura, promotion of the entrepreneurship culture has been sideleined due to the focus on the development of the MSME sector aligned with the presence of natural resources in the state.

3.8.2. Policy and incentives for startups (Tripura IT/ITeS Startup Scheme, 2019)

The Directorate of Information Technology under DIC was formed in 1999 to initiate IT activities in the state.

The aim of the department was to have a better management of projects and the state by implementing e-Governance, improving financial management, organizing training program for increasing IT literacy, promoting IT education in schools and colleges of Tripura and encouraging the startup activities in the state. The department has also created a unified startup portal for the state to track their progress.

To foster innovation in the state, a Startup Council is being set up. The Council will be responsible for reviewing the progress of startups on a regular basis and overseeing selection process to get seed funding.

The Council will define specific performance indicators which will be used to monitor the startups progress using an online portal.

The department is developing startup culture in the state by providing benefits to the startups under Tripura IT/ITeS Startup Scheme, 2019 of the state such as:

Support	Description
Physical and software infrastructure support	The government will provide internet connection in all incubation facilities and allocate cloud storage space in the State Data Center with an 100% subsidy for first three years. Incubation Centers will be set up providing maximum of 5 seats per startup for initial 3 years free of cost.
Management support	A single window clearance system is being implement under the Ease of Doing Business Initiative. Startups will be provided with necessary assistance such as guidance facility and setting up meetings with Angel Investors and Venture Capitalists.
Incentives for startups	Patent filling cost reimbursement up to a limit of INR 2 Lakhs per Indian patent. Internet bandwidth subsidy up to a limit of INR 40,000 per year and reimbursement of power charges for initial 3 years.

Table 35: Incentives for Startups under Tripura IT/ITeS Startup Scheme, 2019^{147,148}

As per the interview with Department of Commerce and Industry, the Tripura IT/ITeS Startup Scheme has been developed online under a single window portal system. There are no significant achievements available so far as the scheme is still in a nascent stage. However, it should be noted that the scheme is the only scheme available to the industrial entrepreneurs to avail incentive or subsidy for any manufacturing and service industry. For example, in FY 2017-18, only INR 8-10 Crore was released under Tripura Incentive subsidy. However, in the FY 2020-2021, approximately INR 40-45 Crore has been provided.

(A) Support Program for Individuals ¹⁴⁹

(a) Swavalamban program

The state government also launched “Swavalamban”, a self-employment generation program in 2001 with an objective to ensure that a sizeable number of unemployed youths and self-help groups are empowered as potential individual or group entrepreneurs so that they can take up gainful self-employment.

A Swabalamban Society has been constituted for effective implementation of the program where the self-help groups (SHG) component of the program is being implemented through R&D Department and the self-employment program (SEP) component is being implemented by DIC.

The main components of the Program are **skill upgradation and financial support**:

¹⁴⁷ <https://industries.tripura.gov.in/indinfra/>

¹⁴⁸ <https://dit.tripura.gov.in/sites/default/files/IT-Start-up-Scheme-2019.pdf>

Guidelines	Any individual within the age group of 18 to 50 years can apply for loan. Only one person from one family is eligible for financial assistance. There is no income bar and qualification bar for availing of financial assistance under this program. Projects promoted under partnership category, SHG and Cooperative are also eligible for assistance under the program
Performance	By 2018-19, total financial support of about INR 434.37 crores has been provided to 21,496 entrepreneurs under Swabalamban in the form of Bank loan, on an average of INR 2.02 lakhs per enterprise.

Table 36: Main components of the Swabalamban Program

(b) Tribal Urban Employment Program (TUEP)

TUEP scheme was started by the state government to provide 20 days wage employment to one adult family member of every below poverty line (BPL) family and BPL families covered under Socio-Economic Caste Census (SECC) list.¹⁵⁰

During 2018-19 financial year the state government had released INR 4,395.2 Lakhs and total 1,388,500 man-days were generated under the scheme with an average 26 days of work.

3.8.3. Contribution of Major Players

(A) Department of Industries and Commerce (DIC)

(a) Mission

The department aspires to convert Tripura into the preferred destination for industrial and trade activities to provide the people with better living standards employment and self-employment opportunities by optimal utilization of natural and physical resources and economic development

(b) Focus Areas

The department is focused on promoting and developing the rural, micro, small and medium enterprises. Services are being offered by the state government for ease of doing business and for supporting entrepreneurship such as preparation of state industrial profile, Industrial potentiality survey for identification of industrial opportunities, etc.

(B) MSME-Development Institute, Agartala

MSME-Development Institute, Agartala is catering to the MSME needs of Tripura State since 1972 and prospective entrepreneurs are identified by looking at their local status, economical condition and need based activities by the institute which was then, used to prepare state industrial profile.

¹⁵⁰ https://udd.tripura.gov.in/sites/default/files/Guideline%20of%20TUEP_0.pdf

(C) Directorate of Information Technology

The Directorate of Information Technology under DIC was formed in 1999 to initiate IT activities in the state.

The aim of the directorate was to have a better management of projects and the state by implementing e-Governance, improving financial management, organizing training program for increasing IT literacy, promoting IT education in schools and colleges of Tripura and encouraging the startup activities in the state. The directorate has also created a unified startup portal for the state to track their progress.

The department is developing startup culture in the state by providing benefits to the startups under Tripura IT/ITeS Startup Scheme, 2019.

To foster innovation in the state, a Startup Council is being set up. The Council will be responsible for reviewing the progress of startups on a regular basis and oversee selection process to get seed funding. The Council will define specific performance indicators which will be used to monitor the startups progress using an online portal.

(D) Business Incubation at Tripura University

Tripura will get its first business incubation centre in Tripura University's Department of Business Administration. Ministry of Small and Medium Enterprises has selected and sanctioned a fund of Rs 1 Crore for setting up the incubation centre at Tripura University.

MSME-Development Institute, New Delhi, is also collaborating with the department as the implementing agency. The ideas received by the university will be scrutinized in New Delhi and will be forwarded back to the University for further work. Each of the ideas will get a funding of INR 15 Lakh to get developed.¹⁵¹

(E) Space Technology Incubation Centre, National Institute of Technology (NIT), Agartala, Tripura

Space Technology Incubation Centre (S-TIC) is a novel concept conceived by Indian Space Research Organization (ISRO) to tie up the Academia, Industry and R&D institutions in different regions of the country. S-TIC will provide projects of importance to the ongoing and futuristic programmes of ISRO for the research, post graduate and undergraduate students.

This effort is to encourage research culture among the student community. The final year students will be exposed to the problems of relevance and importance to ISRO and proof of concept or prototype developed by them will be validated through nearby tie-up industries. The products once realized will be validated and qualified in the existing facilities of ISRO. Once qualified, they can be inducted in the on-going projects of ISRO and buy back arrangement can be made.

¹⁵¹ <https://www.insidene.com/tripura-university-sets-up-first-business-incubation-centre-in-state/>

Through this, it is hoped to enthruse students to think differently to initiate startup enterprises which can generate employment. The first S-TIC is being initiated in the NER to encourage space related research activities in that region.¹⁵²

4. Screening

Since it was planned that two or three states were to be selected for detailed studies, through an assessment of the ecosystem in the seven states, based on desktop research and initial interviews.

As a result of the initial studies, it has become clear that some states are taking a lead and others are catching up in the efforts to develop a vibrant ecosystem. In the meantime, it has also been revealed that multifaceted and a thorough assessment would be required for the selection. Through two screenings detailed below, Assam and Meghalaya were identified for detailed study.

4.1. Details of initial screening

Four criteria indicate basic conditions required for ecosystem building, the details of which are explained as below.

4.1.1. Government commitment

As competition among ecosystems intensifies, several case studies of other ecosystem (Hyderabad, Singapore, etc.) show that a latecomer ecosystem needs strong government initiatives. The commitment of the counterpart government agencies will be essential for the future support of JICA.

To examine the government commitment of each state, three viewpoints were considered for the selection: a state government's interest in building an ecosystem, a state government's capability and achievements of startup policies.

(A) A state government's interest in building an ecosystem

This criterion can be further divided into two factors.

- How much the top director in a state government demonstrates a passion for startup support. For example, the director's attendance at the interviews by JICA study team can be regarded as a proof for strong interest.
- Track record of startup policies in a state. If a state government conducted a pilot project for creating an ecosystem, the state government can be said to have an interest in it.

(B) A state government's capability

The capability can be categorized into three factors.

152 <https://www.isro.gov.in/update/18-sep-2018/inauguration-of-space-technology-incubation-centre-national-institute-of>

- The leadership of the top officer responsible for startup policies, which includes reliability and public mind. Those who sincerely discuss with JICA study team can be regarded reliable.
- The quality of officials who in fact conduct startup projects. The ownership for projects, polite response to JICA study team, staff allocation for startup projects etc. demonstrate the quality.
- The maturity of a plan for startup support by the state government. A state government's ability to analyze the current condition of its ecosystem is an important factor to examine the maturity.

(C) Achievements of startup policies

All the seven states establish their own startup policies as the section 2.2. shows, and achievements of these policies are also considered to demonstrate the levels of the government commitment whereas tangible outcomes remain to be seen in most of the states.

4.1.2. Supply of human resources

A study of the domestic and international ecosystems in India in the ongoing comprehensive study on support for startups and entrepreneurs of JICA revealed that many of the advanced ecosystems started with the development of entrepreneurial talents, which in turn led to development of technical seeds and funds. To have sustainable source of entrepreneurial talents in quality and quantity makes a difference for development of ecosystem.

The following four factors were considered to examine the supply of human resources.

(A) Soft infrastructure

This factor investigates the number of following services the university / academic institution have. The quality and usage of these services is also taken into consideration.

- Academic curriculum to teach entrepreneurship
- Incubation/ Acceleration programs to support startups and entrepreneurs
- Institutions to provide technical supports to startups such as Technology Licensing Office (TLO)
- Evaluation system to encourage researchers to start business

(B) Hard infrastructure

This factor investigates the number of following facilities the university / academic institution have. The quality and usage of these facilities is also taken into consideration.

- Co-working space
- Incubation center

- Networking space
- Prototyping center
 - ※Prototyping center or a dry lab usually involves equipment focused on computation, physics and engineering, which helps entrepreneurs convert their ideas into a viable prototype.
- Wet lab
- ※Wet Laboratory defined as laboratories where chemicals, drugs, or other material or biological matter are tested and analyzed, which helps entrepreneurs in these areas validate their ideas.

(C) Financing scheme

This factor investigates the number of following schemes the university / academic institution have. The funding amount and number of cases are also taken into consideration.

- Funding to support validation of idea/ proof of concept
- Funding to support starting business
- VC funding

(D) Number of supported startups

This factor investigates the number of startups the university/academic institution have supported.

4.1.3. Market access

One of the key factors for a startup to succeed is to achieve Product Market Fit (PMF), the state where the product of a startup meets the needs of its customers. Therefore the environment for startups with easy access to their potential customers is key for the development of ecosystem.

To examine the market access, whether the companies clearly define their target market and have access to that market as well as that market has enough potential. The market includes not only existing industries in the NER but also emerging areas. It is also important to take into account the possibility of geographic expansion beyond the region.

4.1.4. IT infrastructure

The Internet access and IT infrastructure such as the smartphone availability are essential elements for companies to develop and provide services.

4.2. Assessment for each state

The study team conducted a provisional qualitative assessment of ecosystem in each state based on the four criteria explained above on a scale of nine grades (A+ to C-). The “A” category indicates relatively advanced (considerable efforts are made/abundant resources are present), the “B” is normal (some efforts are made/some resources are present), and the “C” is not advanced (no or little efforts are observed/resources are scarce or non-existent). Within each category, the “+”, “nothing” and “-“ have the same meaning as “A”, “B” and “C”, respectively. N/A is when information was not available. The following tables indicates the summary of assessment results of each state, and detailed explanations on the assessment is provided in the attachment.

State Name	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
(A) Government commitment							
(a) The government’s interest in building an ecosystem	A-	B+	A-	B-	B+	C+	C+
(b) The government’s capability	B+	B+	B+	B+	B+	C	B+
(c) Achievements of startup policies	A-	B	A-	B-	B-	B-	B-
(B) Human resources							
(a) Soft infrastructure	A	B+	A-	B+	C+	B	B
(b) Hard infrastructure	A	B	C	B-	C	C	B
(c) Financing scheme	A	A-	C	B	C	N/A	B
(d) Number of supported startups	A	A-	N/A	C	N/A	N/A	N/A
(C) Market access	B+	B	B	B	B	B	B
(D) IT infrastructure	A-	C	B	C	B	B	B+

Table 37: Summary of evaluation results of each state

4.3. Additional screening

Taking into consideration that the target states for detailed study are also potential states where JICA’s future cooperation could be addressed, the study team conducted additional screening to take this aspect in the screening.

The table below is the comparison of each state’s ecosystem. In order to facilitate understanding by making comparison, a rating was given for each perspective, as follows:

- 3 : SU initiative/ development has already made some outcomes
- 2 : SU initiative/ development has begun, but there is no clear outcomes
- 1 : No initiative/ development has begun, or is in the initial stage.

State Name	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
Human Resources	3	2	2	2	1	1	1
Tech seeds	3	2	2	1	1	2	2
Financial Resources	3	2	2	1	1	2	1
Community	3	1	2	1	1	1	1
Total	12	7	8	5	4	6	5

Table 38: Comparison of each state's ecosystem

The definitions of "Human Resources", "Tech Seeds" and "Financial Resources" are given in 3.2.1. The community assesses the presence or absence of physical facilities, such as hubs, and platforms which enable networking among entrepreneurs, startups, and MSMEs, and the communication environment that supports online networking.

Assam is ahead of other states in all aspects of Human Resources, Tech Seeds, Financial Resources and Communities. Assam Startup, a leading startup support organization, works with several organizations to support startups. Several higher education institutions, including IIT Guwahati, also provide substantial business support for startups. The number of Assam companies registered with Startup India is remarkably high at 1,780, and the state government is also focusing on the startup policy. In addition to financial support from Assam state government, there is also a scheme to collaborate with large companies such as oil and natural gas public sector undertakings and banks. In addition, the number of applications and that of selected companies in the pilot project of this study from Assam was comparatively larger than that of other states, which shows the larger pool of companies in Assam. In addition, it is important to note that there are several potential partners for JICA's future cooperation, such as IIT Guwahati and NIT Silchar, which are already working with IIM-CIP.

Meghalaya has the second largest ecosystem after Assam and started implementing PRIME program since 2020. The Meghalaya Institute of Entrepreneurship is also facilitating entrepreneurship. Although the achievement is relatively a few, its initiative is already underway through PRIME Hubs, which is also growing into a hub for connecting communities. While providing support to startup support organizations, the state government is also working on networking with investors and providing financial support. The number of applications for the pilot project from Meghalaya was second only to Assam. IIM Shillong could be a strong candidate for JICA's future partnership.

Manipur has been working on support for startups from early and has 54 startups registered in Startup India, second only to Assam. Funding is provided by the state government through Startup Manipur. There are training and technical assistance in partnership with universities, and loan from banks to startups. Meanwhile, the absence of an incubation center at the core of the community and the vulnerability of IT infrastructure can be pointed out.

Although the number of startups is small in Mizoram, the state government and universities work closely and are active in producing entrepreneurial talent. However, the implementation of awareness activities is underway as the first step of Startup Policy. Challenges include limited

funding for startups by state governments, lack of private funding, and lack of an ecosystem core hub.

Nagaland lacks a foundation for human resource development, as its educational institutions are small and entrepreneurship education is only provided by NGOs. Although there is a support system for startups, it can be said that the organization that implements it is not well developed and the support menu is not enough. Neither the state government nor the private sector is actively providing financial support, and there are few co-working spaces necessary for the formation of entrepreneurial communities.

In Sikkim, AIC-SMUTBI, an incubation center, is the center of industry-government-academia collaboration and provides various services. AIC-SMUTBI also provides co-working spaces, and is developing as a hub connecting Human Resources, Tech Seeds, and Financial Resources. Regarding financial support, it is possible that large companies provide support in addition to governmental support. On the other hand, the number of startups is small and state government support for startups is just beginning.

In Tripura, the state government and universities have started to establish incubation centers and are making progress in terms of Tech Seed, but the number of startups is small and the efforts have yet to translate into results. Financial support from the state government is limited, and little private funding is available. In addition, although there is no hub as the center of the community, the interview indicates that the IT infrastructure is as good as Assam.

See attachment for details on each state's scoring.

Using the result of above comparison, the final comparison below was made, aiming to identify states where the development of the ecosystem is relatively advanced, where verification of existence of SU with growth potential through the pilot project is possible, and where there are potential collaboration partners for JICA.

Participation of SU to the pilot project is scored as following below criteria:

In terms of the size of the pool of SU companies, 2 points were given to the state with the largest number of applicants, and 0 points to the others. Assam, Meghalaya, and Manipur received the most points (69%, 9%, and 7%, respectively), while other states received the least points (1-2%).

With regards to the existence of potential collaborator, it was scored as follows:

- 2 points If there is a potential partner such as a university,
- 2 points if a government SU support organization is active and could be a candidate for collaboration.

Perspective	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
Comparison of each ecosystem (60% of total score) Based on the above comparison	3	2	2	2	1	1	1
Participation of SU to the pilot project	3	2	2	1	1	2	2
Existence of potential collaborator	3	2	2	1	1	2	1
Total	12	7	8	5	4	6	5

Table 39: Comparison of each state to identify states for detailed study

Based on this scoring, Assam and Meghalaya were identified for detailed study.

5. Result of detailed study

In order to deepen analysis, interviews and information collection were conducted on Brahmaputra Fables, Qwkpro Consultancy, and North East Farm Sales Promotion as startups; and Innovative Change Collaborative Services Private Limited (ICCSPL), Imphal Angels, Tsunagaru Lab, IIT Guwahati Innovation Incubation Centre(IITG-IIC), IIM Shillong as accelerators/incubators, and FINER, FICCI, ICC as representative of companies, Numaligarh Refinery Limited, SM Corporation as potential collaborator for startups.

5.1. Two main questions of this study

Through discussion with JICA on the result of this study till this point, the main questions of this study to verify were concretized into the following:

- 1) Are there companies that could be future catalysts for industrial development in the North Eastern Region?
- 2) Are there sources of human resources for startups that could be a potential partner for JICA

The following are the results of interviews and other information gathering on these two points, focusing on stakeholders in the states of Assam and Meghalaya.

With regards to the first question, while companies are broadly categorized into large corporations and SUs/MSMEs, it was found that there are SUs/MSMEs with growth potential, evidenced by cases such as SUs/MSMEs which succeeded in gaining investments from the private sector, with supports under incubation/acceleration programmes organized by academic institutions or Public Sector Undertakings (PSUs). However, it should be noted that the number of those companies is limited.

It was also found that, while large corporations have regional offices in the NER, they mainly serve operational functions such as sales and marketing and that there are limited activities related to research and development and business development that could lead to creation of new industries.

With regard to collaborations between large corporations and SUs/MSMEs in the NER, it was found that such collaborations are very limited other than funding support for SUs/MSMEs as CSR activities by oil-related PSUs. It was mentioned during interviews to large corporations, that for collaboration for business purposes to occur, SUs/MSMEs in the NER need to scale up. In this regard, FINER is considering a formation of angel funds to provide funding to the SUs/MSMEs, which is currently insufficient.

It was also pointed out that collaboration among players supporting SUs/MSMEs has not been well formalized, which might lead to difficulty in approaching right resources for SUs/MSMEs. Thus, it is also necessary to promote collaboration among those players in addition to the promotion of SUs/MSMEs as mentioned earlier.

With regards to the second question, it was confirmed that incubation centers in academic institutions such as IIT-Guwahati and IIM-Shillong are providing entrepreneurship development activities, and those institutions could be major sources of human resources for companies which have potential to be catalyst for industrial development. It was also confirmed that those institutions are positive with regards to collaborations with JICA in the area of entrepreneurship support and that they could be potential partners for JICA's future cooperation.

For the detail of findings, please refer to 5.2.

5.2. NER ecosystem

Below are the findings on challenges that NER ecosystem faces as well as their evaluation on governmental support for startups. In connection with the screening mentioned above, additional interviews focused on stakeholders in Assam and Meghalaya. Thus the following findings are more applicable to those two states though they could be valid for other states to a certain degree.

It was found that incubation centers in some higher education institutions are making progress in their efforts to support SUs. For example, IIT-G's Incubation Research Park and the Software Technology Parks of India (STPI)'s efforts to promote collaboration between industry, government, and academia are also promoting entrepreneurship. However, the NER as a whole has a limited number of players and initiatives, including educational institutions, working to support entrepreneurship.

Human Resources

- Need for enhancement of awareness of entrepreneurship
- Employment opportunities in the NER are limited as there are only regional hubs for companies. Thus, there is a migration of talent to other regions as other

	<p>regions are perceived to have better paying employment opportunities (FINER, IIT-G, ICC, FICCI)</p> <ul style="list-style-type: none"> • In the North Eastern region, employment in the public sector is seen as desirable as a career (Numaligarh Refinery Limited). There is a need to promote understanding of entrepreneurship and SU, and to foster a culture (multiple) ■ Need for enhancement of capacities • Graduates of higher education institutions from the Northeast do not differ significantly from students from other regions in terms of their qualifications and abilities, but they lack exposure to the business environment and entrepreneurial culture (FINER, ICC). • Communication skills also need to be improved (FINER, ICC). • Entrepreneurs are not equipped with necessary skills to scale their business or make successful fundraising [Imphal Angels, ICCSPL, Tsunagaru Lab] • Entrepreneurs need to understand the global standard of their products [Tsunagaru Lab] ■ Diverse background of entrepreneurs in NER • The characteristics of entrepreneurs who participate in programs varied from fresh graduates from higher education institutions to entrepreneurs who have work experience (IIM-S). • Most of the entrepreneurs who applied for the SU fund had a background in engineering or management and had a work history. Few fresh graduates start their own businesses (Numaligarh Refinery Limited) ■ Lack of talents from outside of the region • In general, the barriers in the NER are the lack of a conducive business environment, the need to understand the culture in order for companies to set up in the region, and the fact that salaries are not as high as in other regions (ICC, FICCI). • On the other hand, it should be noted there is rare case where public efforts succeeded in attracting talents from outside of the region. For example, several SUs from other regions are moving into the research innovation park at IIT-G due to the low cost and availability of human resources. There are also individual cases where many of the SUs supported at IIM-S are from outside the state. In one case, a former employee of a major company in the southern part of India visited Assam and acquired a right to operate a garment factory under a contract with the Assam State government and improved the management.
Tech Seeds	<ul style="list-style-type: none"> ■ Need for improvement of market link • There are not enough market links for startups to acquire customers [Imphal Angels, Tsunagaru Lab, North East Farm Sales Promotion] ■ Need for enhancement of incubation/acceleration program • Technical know-how trainings are needed more [North East Farm Sales Promotion] • Incubators/accelerators need to focus on technology infusion and create local resource-based enterprises [ICCSPL] • There is not sufficient number of mentors and enablers who can guide and groom entrepreneurs with those skills [Imphal Angels, ICCSPL, Brahmaputra Fables]

	<ul style="list-style-type: none"> ■ Lack of collaboration with existing companies for business purpose • The number of SUs supported by the private sector is limited. (FINER, ICC, FICCI). • There is no collaboration with SUs for business purposes. (SM Corporation, Numaligarh Refinery Limited).
Financial Resources	<ul style="list-style-type: none"> ■ Limited availability of finance for SUs • Funding is a major problem for entrepreneurs in the NER [Brahmaputra Fables, Qwkpro Consultancy, North East Farm Sales Promotion] • There are loan schemes by banks but it is difficult for tech startups without tangible assets to access to them [Imphal Angels] • NEDFi's fund is not sufficient for the need. (Numaligarh Refinery Ltd) • IIT-G is providing soft loans to the SUs it supports, but the amount of funding is insufficient; although it has signed an MOU with Indian Bank, it is only providing funding for scale-up purposes, so it needs to provide funding for the seed phase. IIT-G incubation center is in discussions with SUs and VCs in the energy sector (IIT-G). There is no scheme to fund SUs in the seed stage, which is not facilitating growth (FINER) ■ Limited availability of private funding • There are few VCs active in the NER (Too much profit-oriented VCs do not fit in the NER) [Imphal Angels, North East Farm Sales Promotion] • A North East based angel investment network should be formed (Only Imphal Angels exists) [ICCSPL] • Government funding is limited, so private sector funding needs to be mobilized (Numaligarh Refinery Limited)
Community	<ul style="list-style-type: none"> ■ Need for establishment of network of actors of ecosystem • The startup community in the NER is nascent and awareness activity is strongly needed [Imphal Angels, Qwkpro Consultancy] • The collaborations and partnerships among startups are necessary [ICCSPL] • Incubators/accelerators in the NER are working in silos, and there is a need for collaboration and synergy among all these incubators/accelerators [ICCSPL, North East Farm Sales Promotion] • Incubators/accelerators should work together to create sector specific enterprises and startup communities [ICCSPL] ■ Need for space and facilities for startup community • It is desirable to have more facilities that SUs like IIT-Madras can use for research and development and more physical space that encourages interaction among SUs (IIM-S) • Space for collaboration among people with different skills, available at low cost, would facilitate the development of SUs (Numaligarh Refinery Limited)

Table 40: Challenges of the NER ecosystem

Regarding the technical support, the followings are major activities among others:

- The Technology Incubation Centre at IIT Guwahati has supported approximately 32 SUs and has completed support to approximately 12 so far. New Generation Innovation and Entrepreneurship Development Centre at IIT-G supports IIT-G students to create prototypes. IIT-G has already collaborated with IIM-CIP in mentoring for SUs.
- IIM Shillong is currently supporting approximately 50 SUs. It is now in discussion for collaboration with NEDFi.
- As part of the Software Technology Parks of India (STPI) initiative under the Ministry of Electronics and IT, three entrepreneurship centers have been set up in the NER in 2020, specifically at Guwahati, Shillong and Imphal among 20 centres which are planned. This is aimed at promoting innovation and creating an ecosystem through collaboration between industry, government and academia.

As written in the above table, there is not major case of collaboration between SU and existing companies in business term. However, it is noteworthy that two oil related PSU (Public Sector Undertaking) based in Assam are supporting SUs in accordance with the framework of CSR obligations stipulated in the Companies Act and national policy. Two companies have formed a fund to support SUs, and provide support to selected SUs by providing funding, business advice, and connecting them with resources such as IIT-G and NEDFi.

Under the Companies Act in 2013, large companies that meet certain criteria, such as net profit of at least INR 50 million, are required to allocate at least 2% of their profits to CSR. Support for technology incubation is also classified as CSR, and its amendment in 2016 expanded the scope to include support for incubation by non-educational institutions.

In line with the Startup India initiative, 10 oil and gas PSUs have been invited to participate in Start-up Sangam, as directed by the Ministry of Petroleum and Natural Gas, which launched in 2016 with a planned budget of Rs. 320 crore over three years. Those companies have signed MOUs with a total of 30 SUs and also with IIMs, IITs and incubators.

5.3. NER governmental support

In order to analyze the possibility of support for governmental initiatives, an assessment on support from the state governments as well as from the central government for startup was conducted. In summary, while there is positive evaluation of governmental initiatives to a certain degree, interviewees pointed out challenges and potential area of improvement.

On the positive side, there were following comments:

- The Government of Meghalaya has been making a lot of investments into entrepreneurship through MIE and the PRIME Hub. (IIM-S)
- The Assam Startup is a good place to meet stakeholders, and anyone can join the community [Brahmaputra Fables]

- The Government of Assam provide higher support to startups, compared to other states [North East Farm Sales Promotion]

However, that central and state governmental support are perceived to be improved in the following aspects:

- Effective implementation of governmental support
 - Shortening of lead time for disbursement of grant
 - Enhancement of monitoring of implementation of governmental scheme
 - Enhancement of transparency of startup selection process for support programs
 - Timely delivery of announced support
- Business environment needs to encourage competition [Brahmaputra Fables]
- Improvement of rules and laws, which currently make it difficult for the startups to establish. Some of the issues faced by startups in the region include:
 - The law of land is unfavorable for people from outside the region (non-locals)
 - Land laws and land conflict have acted as a disincentive for development
 - Single window clearance for establishment of business is needed
- Need for governmental actions for improving connectivity (IIT-G, Numaligarh Refinery Ltd.)

5.4. Case studies of development of ecosystem

In order to use as reference for the NER to strengthen industrial competitiveness through the development of the ecosystem in remote areas, the study team conducted case studies on initiatives in Japan and overseas.

It was found that while models of development vary, the importance of organizations and individuals that drive ecosystem development is common.

Firstly, in terms of a catalyst for building an ecosystem, it was found the most important factor is the organization or individual that can create one from scratch and lead the ecosystem even in the early days. After a few success stories, followers gather, and a virtuous cycle develops. Those followers are attracted by a variety of factors, including attractive vision, local ties and a good living environment.

Secondly, from industry perspective, the segment of industry which flourishes is not entirely new segment of industry, but rather new technologies and ideas, while leveraging the assets of existing industries in the place by adding value to existing products and services.

Thirdly, the role of government depends on the maturity of the ecosystem. In particular, public sector plays an important role in presenting the direction of industrial development and providing risk money in the initial stage. In the later stage, it shifts to a role that complements the elements that are lacking in the private sector.

Fourthly, communities that connect people, tech seeds, financial resources and information are particularly important in resource-scarce places. For detail of case studies, see the appendix 2.

5.5. Outline of pilot project

In order to analyze roles of entrepreneurs for the ultimate goal of creating leading industries in the NER, a pilot project to identify and groom promising entrepreneurs in the region was conducted.

The main partner of the pilot program was Indian Institute of Management Calcutta Innovation Park (IIM-CIP), a startup support organization of the IIM-CIP, which supports the development of entrepreneurs in Assam, Meghalaya, Mizoram and other states in collaboration with state governments. TiE NCR, which is one of the major communities for startups in India, participated as a sub-partner that can provide guidance on corporate activities such as business planning and marketing strategy, as well as support in terms of human resources development and financing.

This pilot activity is not just a hackathon or a business contest, but an effort to identify the elements necessary to consider strategies for industry creation in the NER and lead to the concrete actions. In other words, the purpose of this project is to verify the feasibility of the approach to the development of entrepreneurs in the NER, and to identify inputs for planning in accordance with the actual conditions of the region and the best partners to promote the creation and development of enterprises in the region.

The application process of the program started on 25th of August. After intensive efforts by IIM-CIP for promotion and outreach till 10th September, the screening was done in two stages. The 3-month acceleration program kickstarted with Bootcamp on 24th September, allowing participated startups and mentors to interact with each other off-line although the rest of the program except for the second Bootcamp in December was conducted mainly online due to the COVID-19 situation in the region. The program was based on four broad elements, viz., Capacity building, Taskforce, Market connect & Exposure and the Demo Day. It was a balanced mix of diagnostics of startups, bootcamp, mentoring and knowledge sessions.

NO	KEY ACTIVITIES	SUB TASK	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1	LAUNCH	Launch of portal	25 th August				
		Partner onboarding					
		Promotion & outreach					
2	SCREENING	First Screening					
		Final Screening					
3	ONBOARDING	Startup & Mentor					
		Diagnostics					
		Bootcamp (Networking)		Bootcamp I- 24 th Sep			Bootcamp II- 16 Dec
4	CAPACITY BUILDING	Mentoring					
		Knowledge sessions			Session I- 30 Oct	Session II: 9 Nov Session III: 29 Nov	Session IV: 7 Dec Session V: 9 Dec

Figure 28: Overview and overall schedule of the activity

Through the diagnosis of startups, or interviews between startups and mentors, challenges of startups are identified, and various measures were adopted taking into account these adverse conditions of the NER. For instance, since NER startups lack basic skill set as entrepreneurs and require hand-holding support, mentoring was provided by taskforce composed of 2 mentors, a subject matter expert and a business mentor, instead of a single mentor. The other point is that there is a lack of exposure to VCs and investors in the NER. Therefore, startups are struggling for fundraising or even for communication with those investors. In the program, bootcamp provides the opportunities to get connected with VCs and investors. Besides, India’s leading VCs and investors were on-boarded as mentors and as speakers so that the startups had a chance to learn the way of thinking of investors and how to deal with it.

NO	Problem area	Redressal mechanism
1	Dearth of Corporate Engagement	TiE Delhi NCR(Sub-partner of the program) roped in to create a 2-way engagement between the Startups and the members from TiE Delhi NCR as mentors
2	Wanting in new-age technological knowhow and wide business vision	Taskforce creation wherein each Startup is mapped to 2 mentors –a Subject Matter Expert and a Business Mentor
3	Insufficient exploration of networking and collaboration opportunities	The Startups are connected to various ecosystem partners to help them resolve impasse related to R & D, skill outsourcing, logistics, distribution, purchase of fixed capital, and capital constraints, among others.
4	Relatively lagging in areas of Marketing & Branding, Pitch Deck Preparation, Financial Projections, and nitty gritty of Fundraising	The Knowledge sessions covered specialised topics on Marketing & Branding, Financial Projections, Fundraising, Pitch Deck Content, and the Art of Pitching.
5	Inexperience in facing Investors, Fundraising, and Negotiation	Knowledge Sessions provided in-depth insights into Deal Structuring, Startup Valuation, and the legal aspects of Fundraising.
6	Lacks of exposure to VCs and Investors	India’s leading VCs and investors were on-boarded to mentor and have a close look at the Startups.

Table 41: Some of the measures adopted to overcome

IIM-CIP has a wide network with prominent VCs, entrepreneurs, industries all across the nation. Some of the most relevant stakeholders in ecosystem at the national level such as Mr. Rajan Anandan, Managing Director of Sequoia Capital India participated as speaker to transfer the knowledge to the selected startups.

No	Topics	Resource Person	Date
I	Branding & Positioning	Chandradeep (CD) Mitra Mentor, IIM Calcutta Innovation Park	30 Oct 2021
II	Financial Projections	Mukesh Sharma Co-Founder & MD, Menterra Venture Advisors	9 Nov 2021
III	Pitch Deck Content	Anil Joshi Founder and Managing Partner, Unicorn India Ventures	29 Nov 2021
IV	Preparing for Funding	Rajan Anandan Managing director, Sequoia Capital India	7 Dec 2021
V	Making the Winning Pitch	Srikant Sastri Chairman of the Board, IIM Calcutta Innovation Park	9 Dec 2021

Table 42: Topics and speakers of knowledge sessions

Due to the regional network of IIM-CIP and its efforts, the program witnessed 195 complete applications. Of these, Assam had the largest number of companies (135), followed by Meghalaya (18) and Manipur (13). Regarding the industry, the number of agriculture and food-related companies led the way with 57, followed by tourism with 20, technology with 16, education with 15, and healthcare with 14. The screening was done as below.

- 1st screening by application documents
 - ✓ Criteria: Social Impact, Innovation, Business model, Revenue, Team
 - ✓ Out of 195, 24 startups were passed onto the next stage
- 2nd screening by pitching
 - ✓ Juries are composed of IIM-CIP mentors and VCs
 - ✓ With consensus of juries 12 startups are selected for the program

The startups were diverse but with major concentration in Agriculture and Food in industry as well as Assam in location.

No	Company Name	Industry	State
1	Zerund Manufacturing Private Limited	Waste Management	Assam
2	Dong Valley Creations Private Limited	Agriculture, Food	Assam
3	Zizira	Agriculture, Food	Meghalaya
4	OurGuest Travels	Tourism	Sikkim
5	North East Farm Sales Promotion	Agriculture, Food	Assam
6	Deshen	Agriculture, Food	Nagaland
7	Drones Tech Lab	Drone, Technology	Assam
8	Hnahlan Grape Growers Society	Agriculture, Food	Mizoram
9	My3DSelfie Pvt. Ltd.	Technology	Assam
10	PWR Bio Unit	Energy	Assam
11	Breathe Clinic	Healthcare	Assam
12	Ruralnomics Pvt. Ltd.	Agriculture, Food	Meghalaya

Table 43: List of selected startups

The founders of the companies that participated in the program have a wide array of experience and have gained either relevant educational qualifications or professional experience in their field before starting up their venture. Many have pursued some level of studies in the Northeast while some founders have also gained exposure from other parts of India or abroad. Several of the more prominent startup founders have previous stellar startup or corporate experience.

Founder	Highest Education	Location of education	Prior Entrepreneurship Experience	Year of experience before founding
My 3D Selfie	Bachelors in Software Engineering	Canada	Yes	8
OurGuest.in	Bachelors in English	Delhi	Yes	10
Dong Valley	MBA in Marketing	Bangalore	No	14
Breath Clinic	PGD Healthcare and Hospital Management	Pune	No	9
Zerund	Bachelors in Engineering	Assam	No	0

Table 44: Academic/Professional Background

Regarding the motivation to start the business, in several interviews with startups from the NER, it was found that socio-economic difficulties in the NER, lack of an understanding of the Northeast culture and its products in the rest of the country, and potentials of resources in the region not been fully explored were some of the most common reasons for founders to take up entrepreneurship. Many times, the motivation was formed when the founders gained exposure outside the region and took cognizance of business opportunities or lack of awareness in the rest of the country about potential offerings of the region.

First, many founders wished to solve societal and socioeconomic issues of the region which were linked with lack of education, resources, and the region lagging the rest of the country in terms of trends and technology. These founders saw an opportunity to leverage technological advances to create opportunities for the people of the NER. In addition, they focused on localization features such as language to reduce the barriers for the potential beneficiaries.

Second, founders operating in promoting the local handicrafts, food, and material of their respective areas in the NER, when travelling to other parts of the country for their education or employment, realized that most of the country had little experience of trying the offerings of the region. Even though founders had no background or experience in starting a business

or expertise in their regional specialty, the founders were motivated to uplift their local artisan/farmers and village through the enterprise. Founders were able to find like-minded individuals in the region who also wished to promote their region’s offerings to the rest of the country.

Third, founders who had a technical background and were engaged in a corporate setting realized that while NER was an important region for several businesses, only raw materials were being imported from NER and no facilities were available in the region to process these materials which could save businesses money, resources, and time in achieving the final product. These founders saw an opportunity to create processing capabilities in the NER and potentially become the leading player in the region due to early mover’s advantage.

- **Key Performance Indicators (KPIs) of the program**

To measure the comprehensive success of the program, input, and output KPIs were identified. Input KPIs referred to metrics associated with the program’s content. Output KPIs referred to metrics that would evaluate the performance and success of the startup due to their participation in the program. Since Output KPIs focus on the startup’s growth and trajectory after the event, the KPIs are given a longer timeline and are to be confirmed by August 2022.

IIM-CIP achieved 100% completion of the Input KPIs and have already achieved 40% of the output KPIs with the other long term KPIs still under progress.

No	Input KPI	Status
1	100% start-ups are connected to investors	Achieved
2	100% start-ups to receive feedback from Investors	Achieved
3	100% start-ups trained on presentation skills	Achieved
4	100% start-ups get individual visibility on social media	Achieved

Table 45: Input KPIs and Status

No	Output KPI	Status	Achievement Percentage
1	40% start-ups to receive funding interest from investors	Achieved	50%

2	80% start-ups prepare business plan worthy for geography expansion	In progress	75%
3	80% start-ups prepare investor worthy pitch decks	In progress	75%

Table 46: Output KPIs and Status

Startups have made considerable progress in achieving the KPIs and reaching their goals and objectives to participate in the program. The following observations were noted to account for the KPIs that are in progress or have not been achieved yet:

1. Certain startups are under negotiation is with Investors, but a deal has not been achieved yet due to an impasse on equity negotiations.
2. Certain startups are still under negotiation with potential clients.
3. Certain startups are either focusing on a hyperlocal business model or are interested in first expanding their business in the NER region before expanding.
4. Certain pitch decks were originally not very well articulated, and it takes lots of efforts to reach to investor worthy level
5. Certain startups are not interested in funding for now.

Although the two KPIs below for mid-term are yet to be achieved, one startup has already raised fund with angel investor and another startup is working on deal closure with one VC as of 14th February 2022.

- 20% start-ups expand business to new geographies within 6 months of the program ending
- 20% start-ups raise funding within 6 months of the program ending
- **Demo Day**

Selected Startups from the Acceleration program participated in the Demo Day, held virtually on February 4, 2022. 8 startups presented their business to a panel consisting of 11 investors, representing coveted organizations from India, as below:

No.	Investor	Designation	Organisation	Overview
1	Shobana Prakash	Partner	100X.VC	VC for seed stage based in Mumbai

2	Nitika	Partner	Chandigarh Angels Network	Community of angel investors based in Chandigarh
3	Saketh Katikaneni	Partner	Chiratae Ventures	VC based in Bengaluru
4	Sandro Stephen	Partner	IAN (Indian Angel Network)	Community of angel investors based in New Delhi
5	Gaurav	Partner	NEVF (North East Venture Fund)	Fund managing company under NEDFi
6	Subhadeep Sanyal	Partner	Omnivore Partners	VC specialized in agri and food based in Mumbai
7	Addison Appu	Partner	ThinKuvate	VC for early stage based in Singapore
8	Faiz	Partner	Water Bridge Ventures	VC for early stage based in New Delhi
9	Ranjeet Shetye	Partner	YourNest VC	VC specialized in early stage deep-tech companies based in Gurgaon
10	Mukesh Mallik	Partner	ProjectGK	Company supporting SUs and VCs based in New Delhi
11	Shreyansh Singhal	Partner	Ankur Capital	VC for early stage based in Mumbai

Table 47: List of VCs participated in the Demo Day

Apart from the investors, the event was also attended by the respective startup mentors, along with officials from JICA, TiE Delhi and IIM-CIP.

5.6. Insight from the pilot activity

This pilot project was conducted with IIM-CIP, which has a rich track record of operating acceleration programs in the NER, as a partner. The IIM-CIP has made a significant contribution to identify and groom viable entrepreneurs in the region, which is the main objective of the pilot activity, in the following aspects. As for KPIs, the achievement of almost all measurable KPIs at present has been confirmed, and IIM-CIP is confirmed to be a strong partner candidate for future

support for the discovery and development of entrepreneurs in the NER. The network of IIM-CIP and other stakeholders obtained through this pilot project is a useful asset for the future development of startup and MSME support in the NER, and it should be fully utilized.

- Extensive network of startups and MSMEs in the NER

IIM-CIP is the implementing agency of support programs for entrepreneurs by Assam Startup, a public initiative to support entrepreneurs in Assam, and operates incubation programs in Meghalaya, Mizoram, and other states. It has a wide range of relationships with entrepreneurs and support agencies in the NER, both public and private. Taking full advantage of these networks, we were able to successfully recruit 195 companies from all over the NER, despite a very short recruitment period of about 2 weeks.

- Quality network of mentors, investors, and large companies outside the NER

IIM-CIP is one of the leading business schools in India and has a high-quality network of business persons throughout India, with alumni and others. Under its umbrella, IIM-CIP has provided a high-quality network that is essential for entrepreneurs in the NER to expand their business outside the region. For example, IIM-CIP has invited a number of investors who are affiliated with prominent venture capital firms in India such as Omnivore and have interests and experience in supporting entrepreneurs in the region, to serve as mentors for selected companies. Also IIM-CIP invited prominent investors and representatives of large companies to attend various events. It also secured participation in the program as a sub-partner of TiE NCR, a nationwide startup community.

- Providing support with full awareness of the challenges startups and MSMEs in the NER face

The IIM-CIP has a rich track record of supporting startups and MSMEs in the NER, providing support tailored to the needs of companies in the region. For example, as mentioned above, for entrepreneurs who lack basic entrepreneurial skills compared to entrepreneurs from outside the region and face a wide variety of challenges unique to the NER, a task force consisting of multiple mentors is organized for a single selected company to provide a team with handholding support. As a result, participating companies were highly satisfied with their programs.

Through the multitude of experiences gained in the program, IIM-CIP was able to identify the main strengths and weaknesses of the Northeast ecosystem and the startups in it.

According to IIMC, the strengths of the ecosystem include:

- **Enthusiasm and seriousness** among the youths to grow their business.
- An earnest desire to **learn quickly** and **grow**.
- A **unique flavour** augmented by rich culture and traditions that make the startups stand apart from their mainstream counterparts. The region boasts of an eclectic range of **handloom and handicraft, organic agri products, unique cuisines and jaw-dropping landscapes** that are largely unexposed but hold a mammoth potential to attract national and international consumption.
- **Pride in the culture** and an intense desire to communicate it correctly.

- The **consumption of NER** as a market in itself is very large and yet to be fully explored by start-ups/MSMEs.
- Presence of **quality academic** institutions (IIT, IIM, NIIT, Agriculture Universities)

According to IIM-CIP, the weaknesses of the ecosystem include:

- Lack of expertise in creating **pitch deck** and delivering the pitch rightly.
- Wanting in areas of **Fundraising and Valuation.**
- Lack of differentiation between the core and the non-core areas of business.
- Insufficient knowhow in **business structuring.**
- Lack of **confidence and conviction** to rise above only solving local problems and take their products/services to the national and global level.

In addition, thorough the interviews with the selected companies, **hiring and skilling** of talents is identified as one of the weakness of the ecosystem. Companies in NER must optimize and budget resources for hiring talent. While hiring is an important aspect for expanding operations, companies struggle in finding the right talent in NER and hence the associated cost with finding talent becomes very high. As companies expand their operations, it becomes important to hire dedicated professionals for specialized areas like marketing or specific IT specializations. Resources with these skills are not easily available in the regions and it is incredibly difficult to hire resources from outside the region. While remote work may be an emerging option, knowledge of the NER region for localization specific operations is a critical factor. Additionally, as companies in NER leverage resources of the region for the business, remote option is not always an option. Even though startups may find reliable resources and invest time and money in training them, it is sometimes difficult to retain the talent as the talent might leave for a larger multinational companies with better pay in an urban area.

A survey was conducted at the end of the second bootcamp (16 December 2021– 17 December 2021) to learn about the participating companies’ evaluation of the program and gather feedback on the how the program’s content and delivery could be improved based on their assessment. As indicated in Table below, the participating companies were able to derive meaningful value through this program.

NO.	Parameter	Feedback
01	Success strategies gained	<ul style="list-style-type: none"> ● Organizational growth structure ● Solution Cash flow problem ● Refined Marketing strategy ● Business roadmap direction ● Scaling up the business model ● Streamlining the model
02	Strategies to improve the programme	<ul style="list-style-type: none"> ● Increasing the mentor pool ● Hands on Mentorship

		<ul style="list-style-type: none"> ● Opportunity for networking with various government departments ● Opportunities for more investors connects
03	Strategies to cope with challenges related to financials	<ul style="list-style-type: none"> ● Involvement of the government in a private-public ● Collaboration & funding ● Providing pre-seed grants for startups ● Linking with banking institutions
04	Support received from IIM-CIP	<ul style="list-style-type: none"> ● Mentorship, Networking and Market Linkage. ● Suggestions to streamline the business model ● Market connects ● Knowledge expansion and awareness of various investment opportunities

Table 48: Analysis of the questionnaire to the participated companies

Through the questionnaire, participated companies' rating for several different parameters as per the contents of the program were also measured on. Overall, the companies rated each parameter highly. As shown in Figure below, rating of parameters ranged from 94% to 74%. The average rating for all parameters was 83.5%. In particular, over 90% rated the quality of the speakers and mentors, and the amount of knowledge and expertise of the mentors, indicating that the mentors and mentors play a major role in the satisfaction level of the program and the effectiveness of the support.

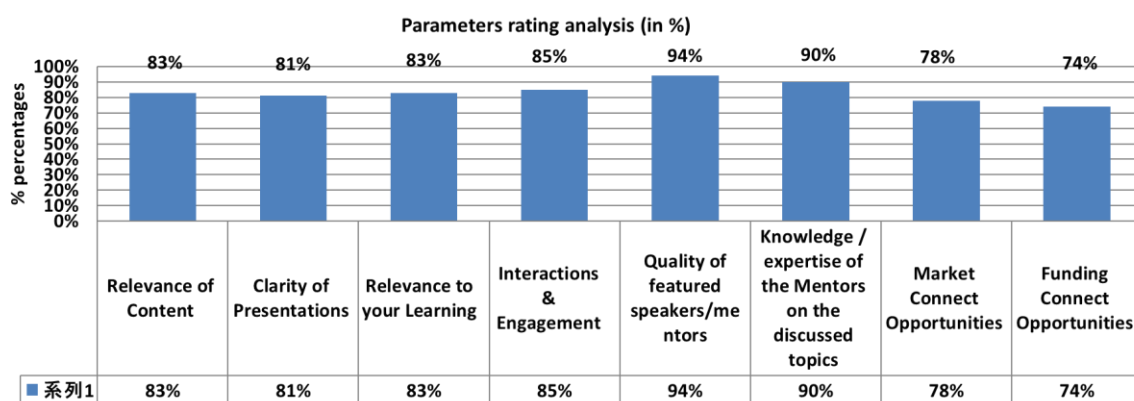


Figure 29: Parameter Rating Analysis

The effectiveness of the acceleration program, which is a method to groom entrepreneurs in the NER, in this pilot activity can be confirmed by the degree of achievement of the KPIs mentioned above and the degree of satisfaction shown by the questionnaire of participating companies. On the other hand, the IIM-CIP and the mentors pointed out the following points to improve the future acceleration programs.

- Recruitment
 - ✓ To equalize the stage and level of startup growth (program for smaller number of companies is an option)
- Program contents
 - ✓ To provide more hands-on support
 - ✓ To maintain the morale of the whole enterprise
 - ✓ Program period should be 6 months since entrepreneurs in the NER lack basic knowledge and skills, and it takes them a long time to learn the content,
- Mentors
 - ✓ Further expansion of the mentor pool (Continue to run acceleration programs to build brand strength, engage more mentors, and create a virtuous cycle of attracting more quality entrepreneurs)

Based on the challenges faced by startups and MSMEs in the NER that were identified through the pilot project, the IIM-CIP presented the following proposals as measures necessary to develop entrepreneurs more efficiently and effectively and to create an environment in which promising entrepreneurs are born and groomed one after another.

Specifically, four initiatives are required: first, efforts to expand the number of startups and MSMEs to raise the level of entrepreneurs participating in acceleration programs; second, efforts to groom entrepreneurs as role models among them; efforts to promote these entrepreneurs and connect them with investors and large companies outside the region; and efforts to attract investors to the NER.

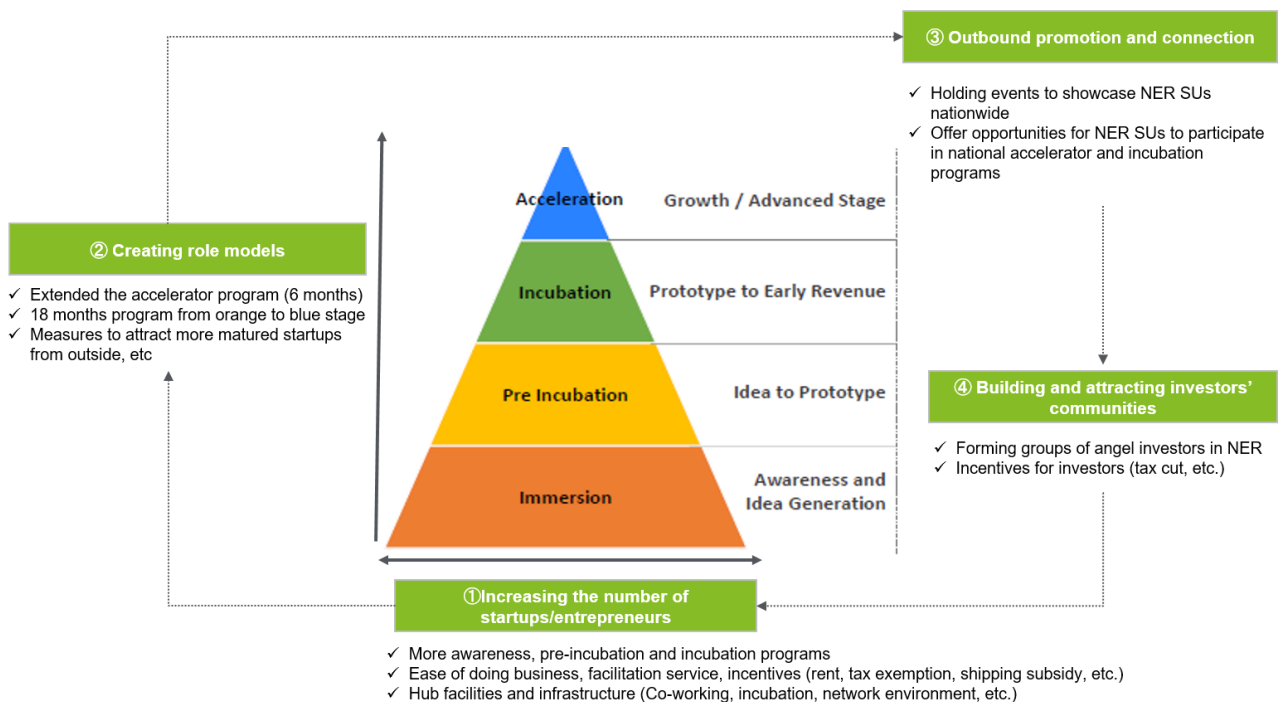


Figure 30: Inputs to strategize the development of NER ecosystem from IIM-CIP based on pilot project

A. Increase the number of startup/entrepreneurs:

- a. **Challenge:** The number of Acceleration ready start-ups/MSME's pipeline is not strong yet. There are not many start-ups/MSME's in the region that may straight away be taken for an Acceleration program.

Suggested Action: There is a need to support a larger funnel of start-ups/MSME's which are in a little early on in their entrepreneurial journey, namely in the **Idea Generation, Idea to Prototype & Prototype to Market stages** (awareness, pre-incubation and incubation), and groom them so that they may be made ready for the Acceleration program (**Market to Growth stage**). This will also require a consistent program to be run for a larger number of years before results are seen.

Implementation Strategy: Parallel to the Accelerator, it is suggested to run pre-incubation and incubation programs for a few cycles/years before a larger pool of start-ups/MSME's are ready for the Acceleration program.

- b. **Challenge:** Most startups/MSME's face challenges in terms of ease of doing business and reaching the external market due to Govt. policies and lack of a robust logistical infrastructure due to the geography of the region.

Suggested Action: The government can step in and facilitate ease of doing business, offer special incentives and facilitate logistics for the new enterprises.

Implementation Strategy: This could be in the form of single window registration and facilitation services, special incentives for starting ventures and on rents, creation of co-working spaces & incubators, tax exemptions, subsidized cargo rates, enhanced and developed infrastructure.

B. Create role models:

- a. **Challenge:** Since the ecosystem is nascent, and the maturity levels of the startups/MSME's is not very developed, the startups/MSME's need a little more time to absorb and implement the Acceleration program inputs/insights

Suggested Action: It is suggested to extend the duration of the Acceleration program so that the startups/SME's absorb the takeaways from the Acceleration program, develop their skills and implement the learnings.

Implementation Strategy: Acceleration program can be extended to 6 months to address some basic learning needs before the mentoring support is offered. If we also include the pre-incubation & incubation interventions then we recommend a larger program of 18 months which may include Hackathon - 3 months (of awareness and pre-incubation), 9 months of incubation and 6 months of acceleration. This may be repeated for a few cycles/years.

- b. **Challenge:** Quality human resources are moving to more mature entrepreneurial ecosystems thereby creating a big gap for resources and the primary reason is that there are not many qualities matured startups/MSME's in the region which can offer them employment. Entrepreneurship is given lower weightage than steady and secure jobs and the primary reason is lack of success stories and proven examples of entrepreneurship as a career option.

Suggested Action: Promoting, glamourizing, and creating a perception so that entrepreneurship becomes aspirational for the youth of the region.

Implementation Strategy:

- Active participation of the respective state governments in drafting policies that would attract the matured startups from advanced ecosystems to set up their offices in the region. Benefits in forms of subsidies, free or subsidized office spaces/manufacturing units, and startup grants could be explored effectively
- Encourage Corporates to collaborate with the startups from the region towards exploring innovative solutions

- Conducting special mentoring and capacity building sessions for existing startups from NER on HR and Employee stock ownership plan strategies for increasing retention chances of top performing employees
- Help build and support a congenial entrepreneurial ecosystem in the region replete with mentors, investors and support services which is sensitive and relevant to the nature and stage of startups in the regions

C. **Outbound Promotion and Connection**

Challenge: Lack of visibility to external Investors and Ecosystem.

Suggested Action: Promoting NE startups/MSME's at the national level.

Implementation Strategy: Creating and promoting national level programs to promote startups/MSME's from the region. Encouraging, supporting, incentivizing and motivating startups/MSME's from the region to participate in national level incubation & acceleration programs, Demo Days, Pitching Competitions, Hackathons, Business Plan Competitions, TV reality shows, showcasing events, expositions, exhibitions and fairs.

D. **Build and attracting investor's communities**

Challenge: NER does not have a significantly active participation of mainstream Investors and hence startups/MSME's do not get enough funding options.

Suggested Action: Influencing an active Investment ecosystem by incentivizing them, creating investment friendly policies and programs to actively invite them to the region.

Implementation Strategy: **Organizing** periodic startup showcasing events, facilitating local angel investing groups, incentivizing schemes for Investors from mature ecosystems, national level startup demo days and showcasing events for NE startups/MSME's.

6. **Recommendations on potential cooperation to support creating an environment that promotes entrepreneurship and corporate growth**

In this study, the present status of NER industry and business environment was grasped, and the needs of support were confirmed. In addition, the effectiveness of the support measures obtained through the pilot project was verified.

Regarding the current situation, along with infrastructure development, agriculture and tourism are recognized as potential growth driver and important sector to focus on the vision and medium-term plan of the NER. Those sectors are also considered to reduce the economic gap with other regions. In addition, policies are being implemented to create jobs by focusing on the promotion of MSMEs. Taking a look at each state's sectorial composition, agriculture is the main industry in each state except in Sikkim, where pharmaceutical industry has developed. In Assam and Meghalaya, agriculture is still an important industry, while there is a tendency to diversify into tourism, natural resources and manufacturing. In addition, states in the NER have some agricultural products in which

they have major share of production in India such as tea, rubber, cardamom, pineapple, passionfruit, eli silk, muga silk. Therefore, agriculture has potential to further demonstrate its comparative advantage through the enhancement of their value.

Therefore, based on the existing industries in the NER such as agriculture and tourism, it is expected the region will nurture the innovators necessary to create new industries with new products and services in order to increase their value, regardless of whether they are in existing or new industry, based on the tourism and agriculture etc. It is also expected that infrastructure development will be accelerated to overcome the barriers of connectivity and innovation. In this way, access to markets outside the region for existing products and services and its value will be improved, and as a result, the development and industrialization of new products and service that are competitive in markets outside the region will be achieved.

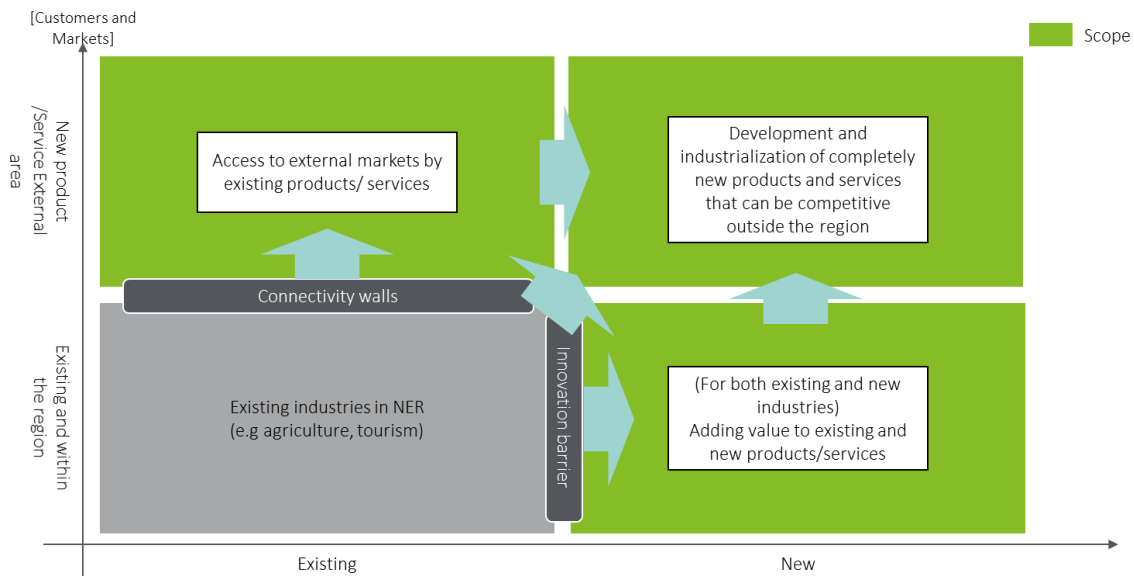


Figure 31: The image of the goal of new industry creation in NER

As for efforts to create added value, there is the possibility of innovation by startups. In the case of startups, although each state has enacted policies to support startups based on the Startup India promoted by the central government, these efforts have only just begun, and it is considered to be still at the early stage among the states in India.

As described in 2.1.3.5, the NER, as a region located in remote areas, face industrial development constraints and challenges, most of which are related to the aforementioned connectivity barriers.

- High manufacturing and logistics costs
- Poor access to mainland India markets where is supposed to be targeted
- Challenges in internet connection environment

Furthermore, the NER, as a remote region, faces a variety of social issues as described below.

- Difficulty in providing medical, educational, and other services in remote areas
- Vulnerability to frequent earthquakes, floods, and other disasters associated with climate change
- Rapid increase of waste due to urbanization
- Outflow of workforce seeking better employment opportunities outside the region

These constraints and social issues caused by connectivity barriers are common to other regional cities. If an environment can be created that fosters abundant human resources, especially young people, which is a strength of the NER, and creates leaders who can solve issues unique to remote areas, it may lead to resolving regional industry bottlenecks and social issues, and to expansion to other regions that face similar constraints and issues.

On the other hand, regarding the talents and SUs/MSMEs with growth potential, it was confirmed: quality human resources are leaving the region; the northeastern people lack basic knowledge and skills related to business; and there is a lack of entrepreneurial culture and a shortage of human resources who aspire to become entrepreneurs. IIM-CIP, which implemented the pilot project, also pointed out that although young people in the NER are enthusiastic about expanding their businesses and there are high-quality higher education institutions, there is a lack of human resources with expertise in business planning and fundraising. It was also pointed out that although the pilot program was conducted by selecting 12 companies out of 195 that applied, there were few truly promising companies that could become competitive outside the region in a short period of time, and the number of companies that have already reached the level to participate in the acceleration program are limited.

In addition to that, there is a lack of players who can provide high quality programs for entrepreneurial human resource development and enterprise development, as they are limited to a few institutions such as Assam Startup and IIT-Guwahati. On the other hand, the fact that the companies that participated in the pilot project were even able to get investment through the process of the project, shows that with the adequate support, it is possible to attract interest from investors. The support provided by the IIM-CIP, which implemented the pilot project, through its strong network of public sector, mentors, investors, and large corporations, as well as the availability of mentors who were familiar with the challenges faced by the local SUs and MSMEs, was considered to be important factor, thus confirming the effectiveness of the accelerator programme. Therefore, increasing the number of players who provide support and resources to SUs and MSMEs and strengthening support through the formation of networks among these players are considered to be effective. In this way, it can be said that efforts need to be made across the entire regional ecosystem to be an environment that promotes the growth of entrepreneurs and companies.

In addition to the infrastructure development for improving connectivity that JICA has been working on in the NER, there is an urgent need to address the human resource issues in the region.

Based on the above analysis, this chapter proposes the future direction of the assistance by JICA.

6.1. Draft Cooperation strategy

The strategy shows the overall direction of JICA’s assistance for industrial development in the NER.

[Overall strategy] Contribute to strengthening industrial competitiveness through creating an environment in which companies that seek to overcome the constraints and challenges of the NER can continuously emerge

- In parallel with the development of infrastructure to improve connectivity in NER, JICA should support enhancement of industrial competitiveness through the creation of new industries and value addition to the existing industries, including agriculture, by stimulating innovation through the development of entrepreneurs and the development of environment for the growth of enterprises
- It should aim to nurture entrepreneurs, SUs/MSMEs which strive for solving social issues and challenges for industrial development in the NER such as connectivity

[Strategy 1] Focus on development of human resources and companies that address issues facing local industries and society

- Making use of abundant supply of human resources in the NER, JICA should support expansion of entrepreneurial talent pool through development of basic skills
- Efforts to address the bottlenecks of industries and social issues, particularly in the NER should be promoted

[Strategy 2] Expand talent pool and create role models at the same time

- Considering the lack of success stories is a bottleneck, JICA’s cooperation should focus on creating role models for entrepreneurs in the NER and to raise their awareness of entrepreneurship through intensive training of entrepreneurs and SUs/MSMEs with the entrepreneurial spirit and growth potential to expand their businesses beyond the region
- A cycle could be created in which successful entrepreneurs who have benefited from the entrepreneurship support and enterprise development ecosystem in the NER can nurture next entrepreneurs by giving back to the region, which should lead to the formation of a self-sustainable ecosystem

[Strategy 3] Promote strengthening of cooperation among key players

- Given the limited and uneven distribution of resources to support entrepreneurship in the NER, JICA’s cooperation should aim to strengthen the network among key players (State governments, universities, incubators/accelerators, public financial institutions, etc.), and strengthen the functions of entrepreneurship support for both NER as a whole and within each state

[Strategy 4] Attract players from outside the region through branding as a place to solve issues in remote areas

- At the same time as increasing the possibility of collaboration with companies outside the region through creation of role models by implementation of Strategy 2 above, JICA’s cooperation should aim to attract players from outside the region, through disseminating information beyond the region and improving the environment as “a place of solution providers to challenges in remote areas” by making use of regional strengths such as the natural environment, along with improvement of infrastructure and business environment

Figure 32: Overall cooperation strategy

6.1.1. Overall strategy

As a general guideline for assistance, we propose that JICA should contribute to strengthening industrial competitiveness through creating an environment in which companies that seek to overcome the constraints of the NER can continuously emerge.

First, in parallel with the development of infrastructure to improve connectivity in NER, JICA should support enhancement of industrial competitiveness the creation of new industries and value addition to the existing industries, including agriculture, by stimulating innovation through the development of entrepreneurs and the development of environment for the growth of enterprises.

6.1.2 Strategy 1: Focus on development of human resources and companies that address issues facing local industries and society

- Making use of abundant supply of human resources in the NER, JICA should support expansion of entrepreneurial talent pool through development of basic skills
- The efforts to address the bottlenecks of industries and social issues, particularly in the NER should be promoted

It has been pointed out that the ecosystem in the NER has a low level of maturity, which makes it difficult to attract risk money from venture capitals. Although assistance has been provided through state governments and public financial institutions (such as NEDFi) to address this issue, it has been confirmed that the funding is limited and not always sufficiently recognized. Thus the issue has not yet been overcome.

An analysis by NTUitive (a startup support organization under Nanyang Technological University in Singapore) can serve as a reference for resolving this issue. According to this, as shown in the figure below, Singapore tends to have a surplus of funds because only a small amount of funds is actually mobilized in comparison to the amount of investors' funds. Therefore, it is pointed out that if there are SUs/MSMEs that are good investment destinations, funds will naturally gather (the relationship between flowers and bees).

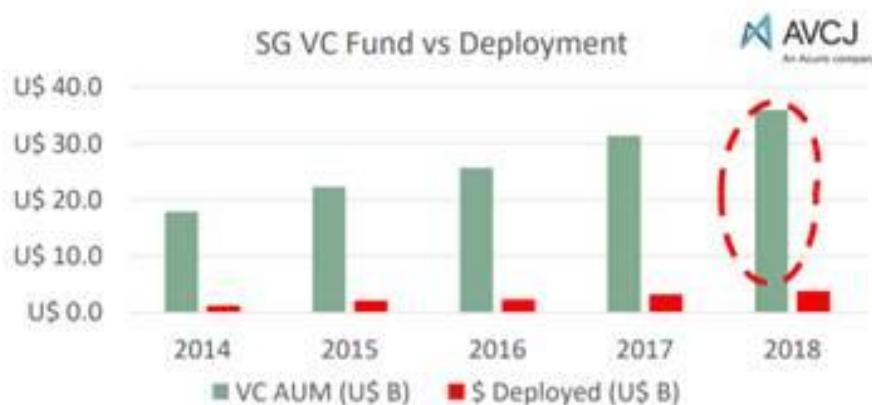


Figure 33: The gap between VC funds in Singapore and its deployment

Source: Excerpt from workshop materials hosted by NTUitive on September 9, 2019

Inward FDI and VC investment in India have also been on the rise in recent years, and the Indian investment market is active. By indicating SUs that are similarly good investment destinations, investment can be expected to be attracted autonomously. This is inferred from the fact that there was a case in which investment in SUs that participated in the pilot project was decided.

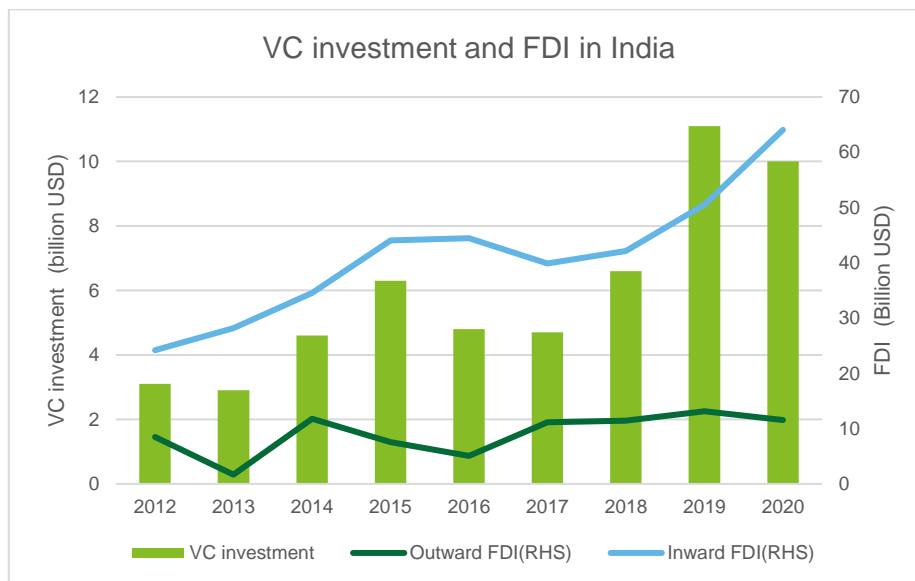


Figure 34: Trend of VC investment in India and inward FDI trend

Source: Prepared by Study Team based on Statista data

Based on the above, it can be said that in order to overcome financial challenges while maintaining sustainability, it is necessary to develop and increase the number of startups/MSMEs with growth potential that can attract investors, rather than simply providing financial support. Therefore, it is appropriate to take the approach of developing from the perspective of human resources. On the other hand, it is also necessary for the state governments to improve the system and raise awareness of financial support programs, respond to financial needs that are insufficient under existing support frameworks, and provide information to domestic and foreign investors on potential entrepreneurs and SUs from the Northeast.

6.1.3 Strategy 2: Expand the talent pool and create role models at the same time

- Considering the lack of success stories is a bottleneck, JICA’s cooperation should focus on creating role models for entrepreneurs in the NER and to raise their awareness of entrepreneurship through intensive training of entrepreneurs and SUs/MSMEs with the entrepreneurial spirit and growth potential to expand business beyond the region
- A cycle could be created in which successful entrepreneurs who have benefited from the entrepreneurship support and enterprise development ecosystem in the NER can nurture next entrepreneurs by giving back to the region, leading to the formation of a self-sustainable ecosystem

In the Northeast, 24.7% of the population moved to a different region than their home state for employment reasons, compared with 3.9% for academics¹⁵³. In Assam and Meghalaya, the birth

¹⁵³ Migration in Northeast India: Inflows, Outflows and Reverse Flows during Pandemic, 2020

rate is higher than the Indian average and the population is growing. The unemployment rate is 9.1%, which is higher than the national average of 6.5% (2017 -18). Those facts indicate there is a surplus of human resources. However, entrepreneurship is still not a common career path, and it is pointed out that there is a lack of mindset and basic business skills. With this in mind, it is important to proceed with the following two approaches simultaneously and in parallel.

- **Creating Entrepreneurs and SUs/MSMEs as Role Models**

By nurturing SUs/MSMEs that develop from the Northeast to the outside of the region, we show that rapid growth beyond the Northeast market is possible, and by using them as role models, we promote business start-ups, encourage repatriation of people from the Northeast from other regions, and attract influential people and companies from outside the region.

- **Expanding the pool of entrepreneurs**

The development of the ecosystem in the NER has been slow compared to other regions in India, and the pool of potential entrepreneurs is limited. Entrepreneurship is still not a common career path, and there is room to improve both mindset and skills through education at universities.

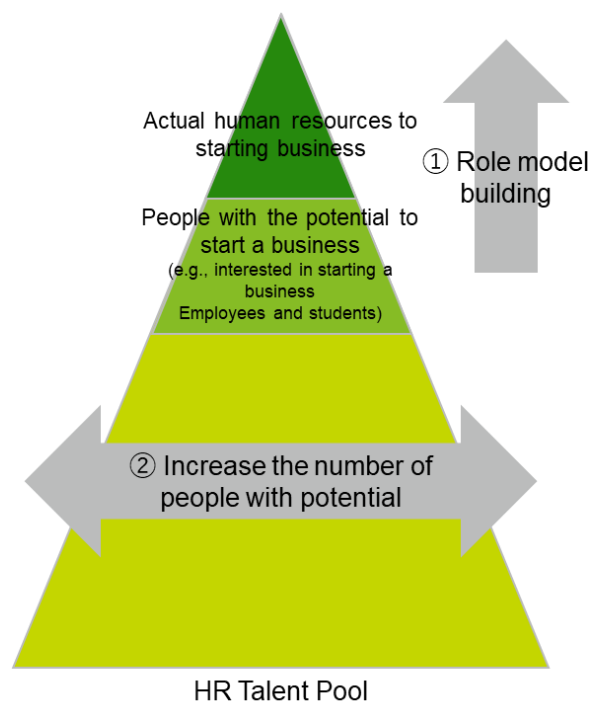


Figure 35: The approach image of cooperation strategy 2

As a result of analyzing leading ecosystems around the world, NTUitive discovered a principle that "When there are more than 150 Series A companies, the ecosystem grows rapidly and autonomously as investors and large companies surrounding startups pour in one after another." Based on the results of this analysis, Singapore developed policy with the goal of generating 200

Series A startups¹⁵⁴. In light of this, in the NER, where the ecosystem is in its emerging stage, public support is initially necessary for the formation of the ecosystem. However, the same method as Singapore could be applied to formulate policies with the aim to provide public support until the ecosystem achieve self-sustainable development in the future. For example, the current startup policies of each state government in the NER have target number of companies to be established. Therefore, in the next phase of startup policy, it is conceivable to aim to increase the number of companies that grow to a certain stage in addition to increasing the number of SU companies to be established, taking into account the differences in preconditions between the NER and Singapore¹⁵⁵.

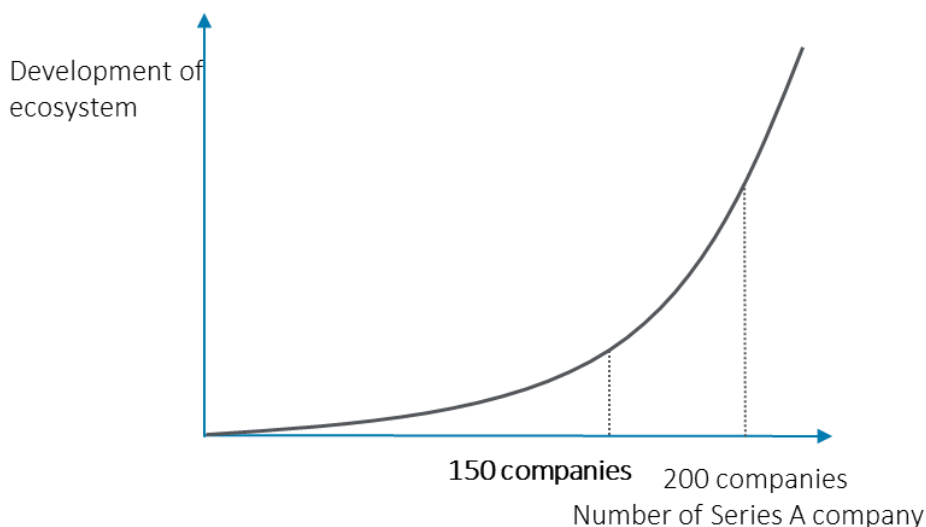


Figure 36: The development trend of Ecosystem and the number of Series A company

6.1.4 Strategy 3: Promote strengthening of cooperation among key players

- Given the limited and uneven distribution of resources to support entrepreneurship in the NER, JICA's cooperation should aim to strengthen the network among key players (State governments, universities, incubators/accelerators, public financial institutions, etc.), and strengthen the functions of entrepreneurship support for both NER as a whole and within each state

In the NER, the resources required to create an ecosystem are limited, and are unevenly distributed within the region and the states. For example, it is concentrated in urban areas such as Guwahati. In particular, well-experienced incubators/accelerators (ICs/ACs) are limited and there is a need to strengthen the capacity of ICs/ACs in rural areas of the state. In addition,

¹⁵⁴ Raising hundreds of millions of yen from VCs and other investors. When you need funds to expand your business in addition to working capital. Initial funding phase from VCs and other investors. A seed round is funding at the startup stage, meaning revenue hasn't yet been generated. It is usually raised from angels and other investors with high risk tolerance. A pre-Series A is funding between seed and Series A, typically in the tens of millions of yen range.

¹⁵⁵ Assam has a target of 1,000 SUs from 2017 to 2022. Meghalaya aims to establish 500 SUs between 2018 and 2023.

although support is being promoted mainly by the state governments, the efforts have not been sufficiently successful due to limitation of resources.

In addition, it has been pointed out that the government's support scheme is not sufficiently recognized, and cooperation among key players involved in supporting entrepreneurs (Departments in charge of startup support in the state government, universities, IC/AC, public financial institutions, etc.) is necessary.

In order to address these challenges, strengthening a network and cooperation among key players could lead to the optimal allocation and strengthening of human resources and resources throughout the NER, and it will make entrepreneurial support accessible in rural areas.

Examples of possible measures could be:

- Establishment of a virtual network to connect entrepreneurs, SUs/MSME and supporters in the NER
- Measures such as online portal services to centralize information
- Establishment of startup hubs in rural areas
- Implementation of acceleration linking large companies, VCs, etc. with universities
- Establishment of matching funds. This could promote cooperation among various activities such as the government's provision of seed grants to university start-ups.

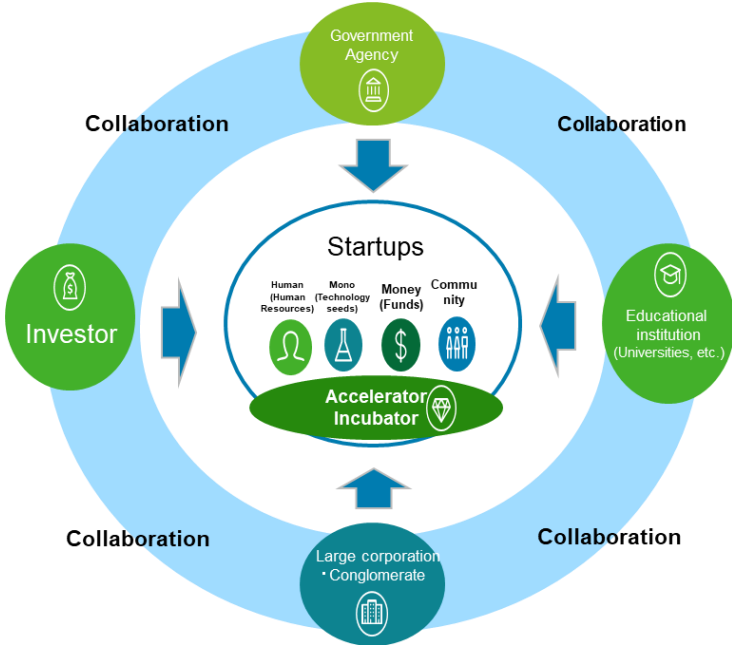


Figure 37: The cooperation image of the players involved in ecosystem

In Assam, for example, the efforts of universities and NEST in central cities are being carried out in collaboration with IC/ACs, state oil companies, and state banks in other regions. However, in Assam, the population of Guwahati, the main city, is 1.1 million compared to 30.94 million in Assam, and it is necessary to involve other cities as well. The government is also constructing incubation centers in rural areas, and cooperation with initiatives centered on Guwahati can be strengthened in the operation. Other states in the Northeast have fewer startups than Assam, with limited networking and knowledge sharing among startups/MSMEs. In addition, while the number of ICs in Assam is 7, the other states have fewer ICs (0 ~ 2) according to Startup India portal site. Therefore, Assam's cooperation with other states in the Northeast could boost their efforts and play a central role in the region.

6.1.5 Strategy 4: Attract players from outside the region through branding as a place to solve issues in remote areas

- At the same time as increasing the possibility of collaboration with companies outside the region through creation of role models by implementation of Strategy 2 above, JICA’s cooperation should aim to attract players from outside the region, through disseminating information beyond the region and improving the environment as “a place of solution providers to challenges in remote areas” by making use of regional strengths such as the natural environment, along with improvement of infrastructure and business environment

In the NER, efforts have been made to attract companies from outside the region, and some successful examples have been realized, such as the attraction of pharmaceutical companies benefitting from the scheme NEIPP. However, there are few examples of entry into the region from the viewpoint of innovation creation, and limited examples of investment and cooperation with SUs and MSMEs in the region.

It has been pointed out that the scale up of the SU/MSME side is necessary in order for large enterprises advancing into the NER to consider cooperation with the SU/MSME in the NER.

Assam ranked 20th among all the 36 states and union territories in the Doing Business Index, while other states in the NER ranked 25th to 29th.

In the case of efforts toward the formation of the ecosystem in local cities, there is a case (Appendix 3) that they succeeded in attracting entrepreneurs using regional strengths such as natural environment and development visions based on local industries.

Place	Factors to attract players from outside the region
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Colorado, USA	<ul style="list-style-type: none"> ■ Good living environment Ranked among the top in the United States in terms of livability due to the rich natural environment, good transportation access, and good public safety. ■ Accumulation of human resources due to high levels of education In the 1950s, national research institutes and R & D centers of large corporations were established, and the concentration of human resources increased. Through the dot-com bubble in the 1990s, a new generation of people with entrepreneurial experience grew. ■ Accumulation of companies through the development of the ecosystem Since the 2000s, the ecosystem has developed around Techstars, one of the world's leading accelerators, and investments and advances by companies, including high-tech industries, have progressed.
Yamagata Prefecture Tsuruoka-shi, Japan	<ul style="list-style-type: none"> ■ Promotion by the prefecture and city 20-year-long consistent investments and support through the use of various national schemes ■ Promotion by IAB President Tomita and Mayor Tomizuka, who set forth a vision to maintain and develop agriculture as an "intellectual industry," which is the foundation of the local community ■ environmental improvement Development of Tsuruoka Science Park as a place for open innovation through industry-academia-government collaboration
Wakayama Prefecture Shirahama-cho, Japan	<ul style="list-style-type: none"> ■ Good transportation access Shirahama-cho is a tourist destination that attracts more than 3 million visitors annually, and it has a well-developed transportation network with the Kansai and Tokyo areas. ■ Good communication environment Free Wi-Fi is available in the town for a trial of a disaster-resistant network. ■ Efforts by the town The town is promoting the attraction of ICT companies and developing office space, and companies are setting up satellite offices. Private companies are opening resort satellite offices for rental, and towns are promoting work.

Table 49: Case study of attracting players from outside the region

In Colorado, the quality of life listed below is one of the factors that attracted talented entrepreneurs to the world's leading accelerator, Techstars. For example, one of the factors that attracted Brad Feld, the founder of Techstars and an entrepreneur who was a key player in the development of the ecosystem in Colorado, is the good living environment.

Rich natural environment	Business environment
<ul style="list-style-type: none"> ■ Famous for its magnificent Rocky Mountains, it attracts many hikers in summer and skiers in winter 	<ul style="list-style-type: none"> ■ Denver ranked # 1 in Forbes' 10 Best Cities for Business and Careers (2015) <ul style="list-style-type: none"> ➤ Evaluate accessibility, concentration of technology industry, etc.
Good security	High educational/cultural standards
<ul style="list-style-type: none"> ■ Forbes named Colorado Springs "one of the 10 safest cities in America" in 2012 	<ul style="list-style-type: none"> ■ The percentage of adults with a college degree or higher was 37.0%, second in the nation behind Massachusetts (2014) ■ The Denver Art Museum is one of the largest museums in the United States

Table 50: Colorado's fascinating attractions

Source: Forbes "America's Top 25 Towns To Live Well" Colorado Department of Tourism

With reference to the cases of other regional cities mentioned above, it is conceivable that the NER could use its natural environment, which is its strength, not only as a tourist resource but also as a place of business to attract entrepreneurs and supporters from outside the region by disseminating information. In order to differentiate the northeastern region's ecosystem from other ecosystems and reflect the unique characteristics of the NER, the ecosystem could be branded as a "place to solve problems faced by remote areas".

There are already companies in the NER that are striving to solve regional issues as evidenced by the list of startups/MSMEs below. Thus, the NER has potential to differentiate itself from other ecosystems, as a place of solution of remote areas.

Company Name	Service Description	Addressed challenges
Brahmaputra Fables	Online platform for the sale of handicrafts and handcrafts from the NER. Overcome physical distance by connecting more than 3000 artisans, including those in remote areas, with last-mile carriers. Already expanding overseas to six countries	Contribute to overcoming market access issues
Qwkpro Consultancy Pvt Ltd.	It develops an online booking platform for hospitals. In the NER, it is difficult to receive medical care without waiting for a long time, so the business was conceived. In consideration of the lack of digitization in rural areas in particular, a reservation system using SMS on mobile phones was adopted.	Contribute to overcoming difficulties in social service delivery

Drones Tech Lab	Agricultural drones that can monitor agricultural products and spray pesticides in hard-to-access areas can also be used for manufacturing surveys and infrastructure monitoring	Contributing to overcoming issues in agriculture as a main industry in NER
ZERUND MANUFACTURING	Development of construction materials that emit less carbon dioxide than conventional red bricks and are advantageous in terms of cost and performance	To the effects of climate change Helps mitigate vulnerabilities

Table 51: Examples of companies who address limitations and constraints in the NER

However, it should be noted that the Northeastern region is currently facing challenges such as a business environment, lack of transportation access and IT infrastructure, and it is necessary to address these issues in parallel. For example, the NER is perceived to have a less favorable business environment compared to other regions. For example, the Doing Business index shows that Assam ranks 20th out of all the 36 states and union territories, while other states rank between 25th and 29th.

6.2. Draft Action plans

The overall action plan to be taken in the short to long term in line with the cooperation strategy is shown below. It aims to establish an ecosystem unique to the NER, as a “place for problem-solving in remote areas”, by attracting players from outside the region based on the outcome of promotion of entrepreneurs and creation of role models.

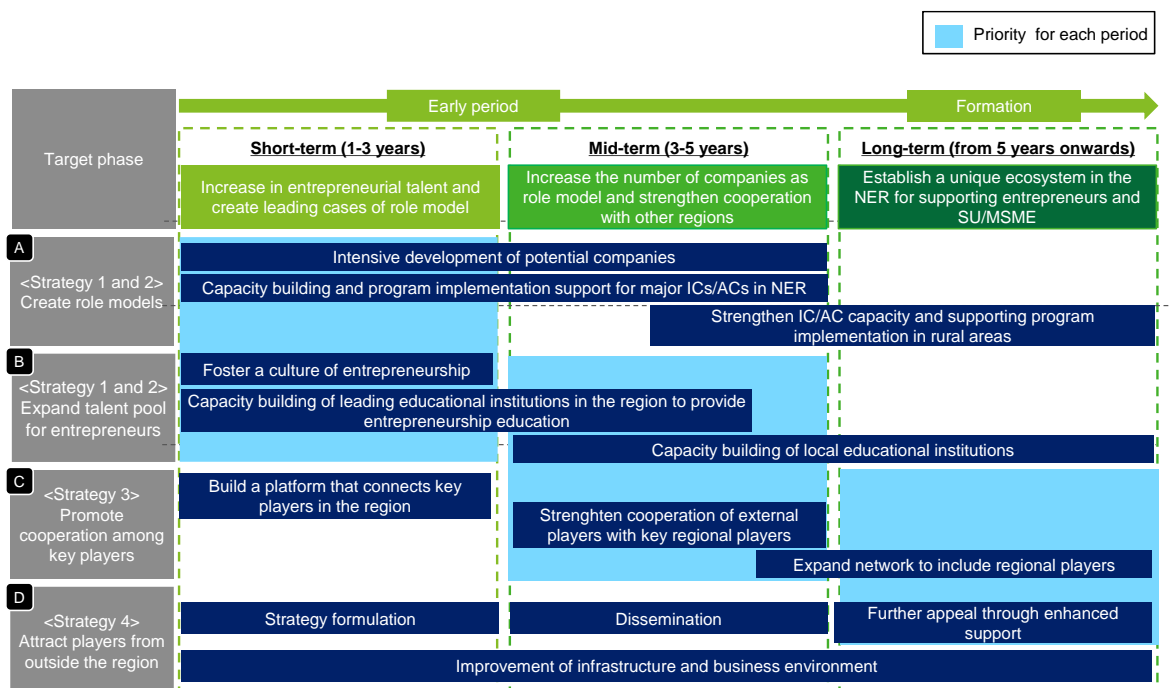


Figure 38: Overview of the action plan

6.2.1 Support strategy 1 and 2: Action plan for creating role models

As a short-term to medium-term initiative, the action aims to create role models at an early stage through further training of promising startups/MSMEs, including companies participated through pilot projects, and will also support the capacity building of the currently few training entities in the region. Given the fact that a certain number of promising startups were identified in the pilot project, and it is possible to grow entrepreneurs supporting business by appropriate provision of networkers and suitable mentors, this action plan will aim to continuously support the growth of startups, so that there will be startups which can be considered as role models. As a goal for the next 3 to 5 years, role model can be defined as Series A, which can be defined as an investment round, raising about INR 50,000,000. It can be regarded as a role model since in general a Series A company should have achieved a certain traction within the regional market and be ready to expand business beyond the region and to raise funds from VCs. Series A. Based on the calculation below, the target of this cooperation could be to produce 3 Series A companies in 3 years and 15 companies in 5 years.

In 3 years: Target should be 3 Series A companies based on the following calculation:

Acceleration programs should target pre-series A companies

The acceleration program is 8 months which is consisted of 2 months for preparation and 6 months for the program. After the acceleration program, it will take approximately 12 months to close fundraising

Thus, in 3 years, three times of programs could be run. If the acceleration program trains 10 startups per program in 3 years, it can groom 30 startups in total.

With the assumption of the success rate for fundraising as 10%, 3 startups should reach to Series A.

In 5 years: Target should be 15 Series A companies based on the following calculation:

The cooperation will train 2 new accelerators in first 3 years. 3 accelerators run 2 programs respectively in the next 2 years, which leads to 6 programs in total. Thus, 60 companies are to be groomed (10 companies/program).

With assumption of success rate for fundraising as 20% due to awareness and pre-incubation activities bearing fruit by this time, 15 companies should reach to Series A, which is consisted of 12 new Series A plus 3 from the first 3 years.

As with the pilot project, this JICA's assistance will initially be implemented in collaboration with influential organizations outside the region such as the IIM-CIP. However, from the viewpoint of ensuring sustainability, this cooperation will involve in major ICs/ACs in the region and equip them through OJT/Off-JT.

In the medium to long term, it is envisaged that in rural areas, where there are currently few leading ICs/ACs, the knowledge and experience will be gradually expanded through knowledge transfer led by the major ICs/ACs developed in the region, while supporting the establishment of new ICs/ACs in cooperation with state governments and major academic institutions.

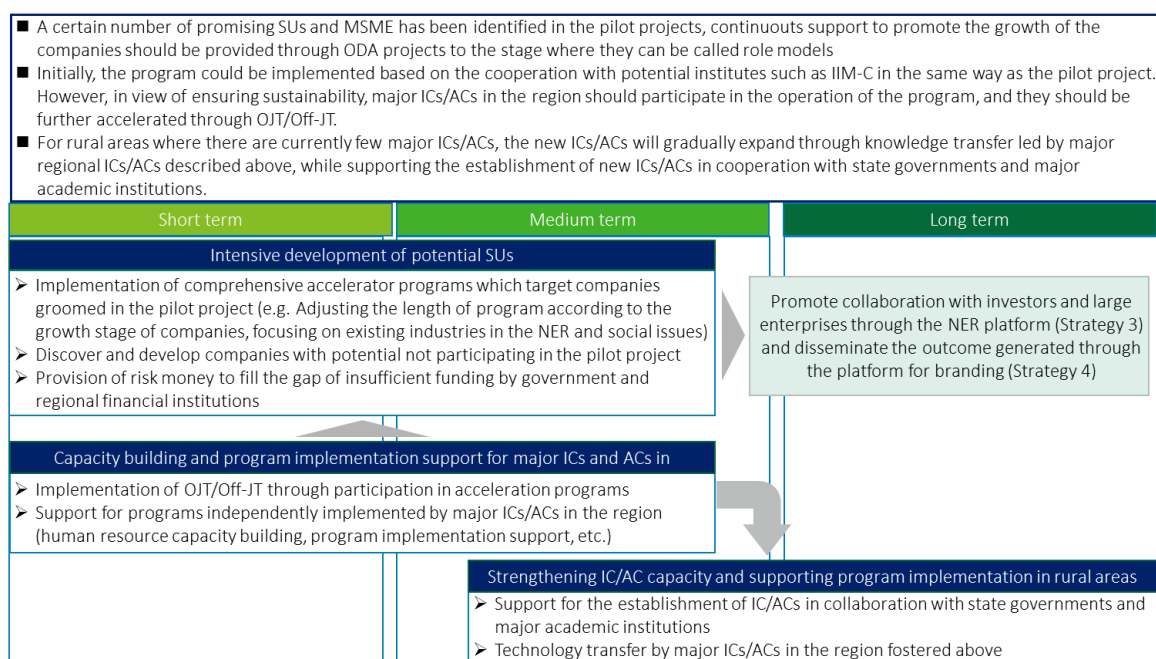


Figure 39: Cooperation strategy 1 and 2: Action plan for creating role models

6.2.2 Cooperation strategy 1 and 2: Expanding the talent pool of entrepreneurs

In the NER, although there are differences among states, the challenge is that the awareness of entrepreneurship is generally low compared to other regions. To this end, in the short term, the JICA's cooperation should promote (Example North East Entrepreneurship and Startup Summit) events held by support agencies in the NER and foster a culture of entrepreneurship throughout the region by disseminating the results both at home and abroad. In response to challenges faced by the industries in the NER and social challenges, it should include new programs which can respond to those challenges in the NER.

In addition, this cooperation will strengthen the capacity to provide entrepreneur education by enhancing entrepreneur development programs at educational institutions such as universities, which are major human resource pipelines, enhancing the capacity of human resources to support such programs, and improving necessary facilities and equipment. As for regional development, JICA's cooperation should start with the major educational institutions in the region and expand the pool of talents by expanding it to regional areas over the medium to long term by utilizing regional platforms.

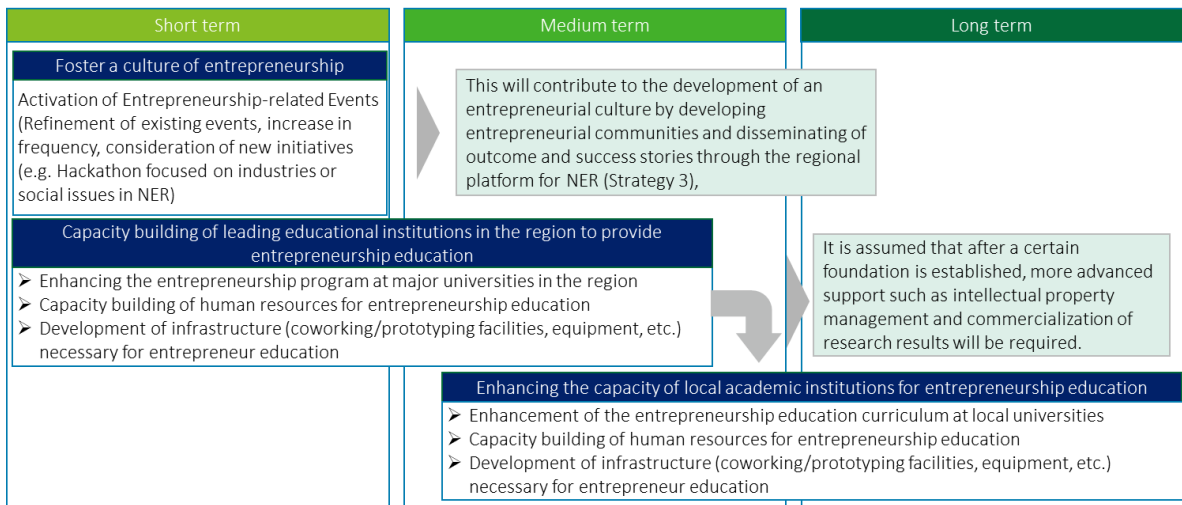


Figure 40: Cooperation strategy 1 and 2: Expand talent pool for entrepreneurs

6.2.3 Cooperation strategy 3: Promote cooperation among key players

In the short term, the “Northeast Innovation Network (NIN: tentative name)” will be established as a framework for sharing information integrally with the NER in order to strengthen cooperation among key players in the NER ecosystem, such as entrepreneurs and SUs/MSMEs, supporting ICs/ACs, and investors. In addition, the online platform of NIN will be set up to strengthen cooperation by gathering and disseminating information on promising SUs/MSMEs from the Northeast, which are supported through the acceleration program, major events related to startups, and support programs.

In the medium term, in line with the progress in creating role models supported by strategy 1 and 2, we will further enhance the dissemination of information to promote cooperation with players outside the region, which will lead to the expansion of the ecosystem.

In addition, in the long term, JICA should support to develop a base for activities such as startup hubs to expand the network with regional players in the NER.

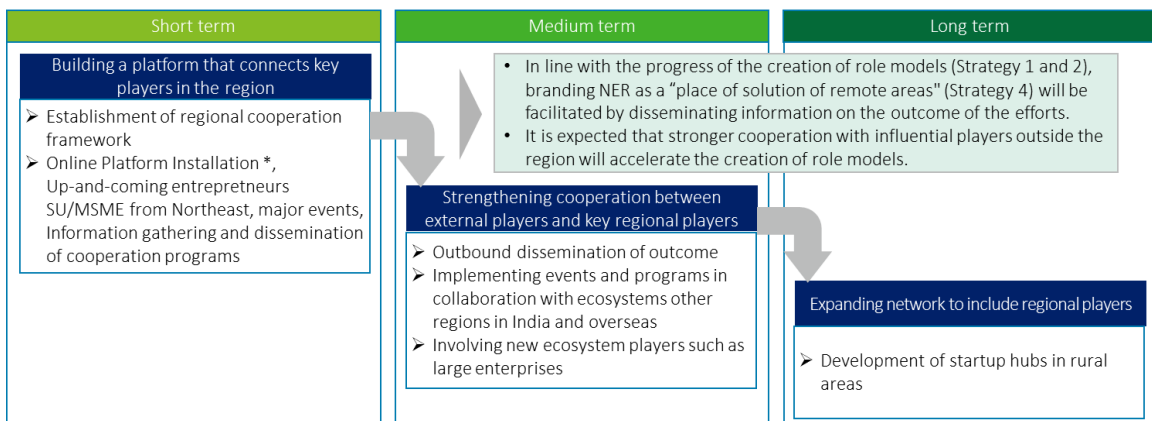


Figure 41: Cooperation strategy 3: Promote cooperation among key players

6.2.4 Cooperation strategy 4: Attract players from outside the region

JICA should support the central and state governments to develop strategies for on how to establish the ecosystem unique to the NER which continuously produce SUs/MSMEs that creates solutions for constraints and challenges for remote areas, capitalizing on its strengths such as abundant human resources and rich nature.

Based on the strategy that has been formulated, JICA can support to publicize the NER’s ecosystem together with the results of efforts in the cooperation strategy (1), (2), and (3). While disseminating information at an early stage, the government aims to enhance measures to attract more people, and to improve the contents by simultaneously advancing the business environment, including legal systems related to business start-ups, and infrastructure development such as transportation, logistics, communications, and IT.

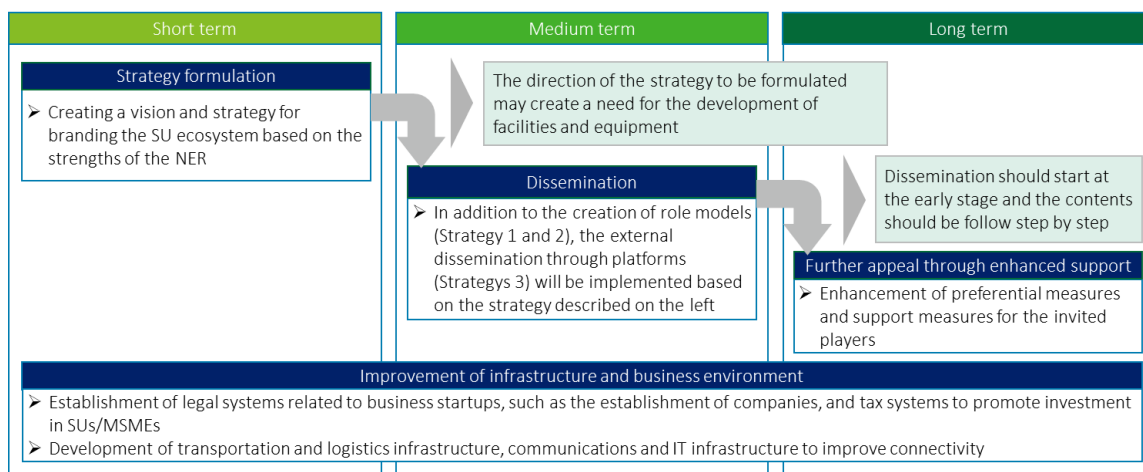


Figure 42: Cooperation strategy 4: Action plan for Attract players from outside the region

6.3. Draft Cooperation program

In this section, individual candidate of cooperation project for action plan is detailed.

6.3.1 Proposed cooperation program for creating role models: SU entrepreneur development project in the NER

Accelerate the creation of role models and strengthen the capacity of local support players through more comprehensive acceleration programs that reflect pilot project inputs.

Items	Details
Support form	Technical cooperation project

Purpose and significance	Role models of entrepreneurs and SUs who can be a catalyst for the creation of new industries in the NER will be developed.
Overview of Activities	<ul style="list-style-type: none"> ■ Plan and implement larger, structured programs that are segmented by SU growth stage and industry, utilizing the suggestions and lessons learned from the acceleration program implemented in the pilot project ■ In the same way as in the pilot project, technology transfer will be carried out in stages through OJT/Off-JT by involving major incubators and accelerators (IC/AC) in the NER in the operation of the project, with the assumption that the project will be implemented in cooperation with the IIM-CIP. ■ Feedback to the government on institutional and infrastructure support needs from the implementation of the program
Executing agency	MDoNER, the state government of the northeastern region *It is assumed that it is possible to consider a form of direct support to the state government without going through the MDoNER.
Partners and other stakeholders	<ul style="list-style-type: none"> ■ IIM-CIP (+collaborator like TiE, etc.) ■ Major ICs/ACs in the NER (assuming incubation centers attached to universities)
Expected effects and outputs	<ul style="list-style-type: none"> ■ To produce Series A companies necessary for the autonomous development of the ecosystem (Based on the calculation detailed in 6.2.1, the target of this cooperation could be to produce 3 Series A companies in 3 years and 15 companies in 5 years.) ■ Fostering accelerators that produce Series A companies ■ Systems and infrastructure related to the above will be developed

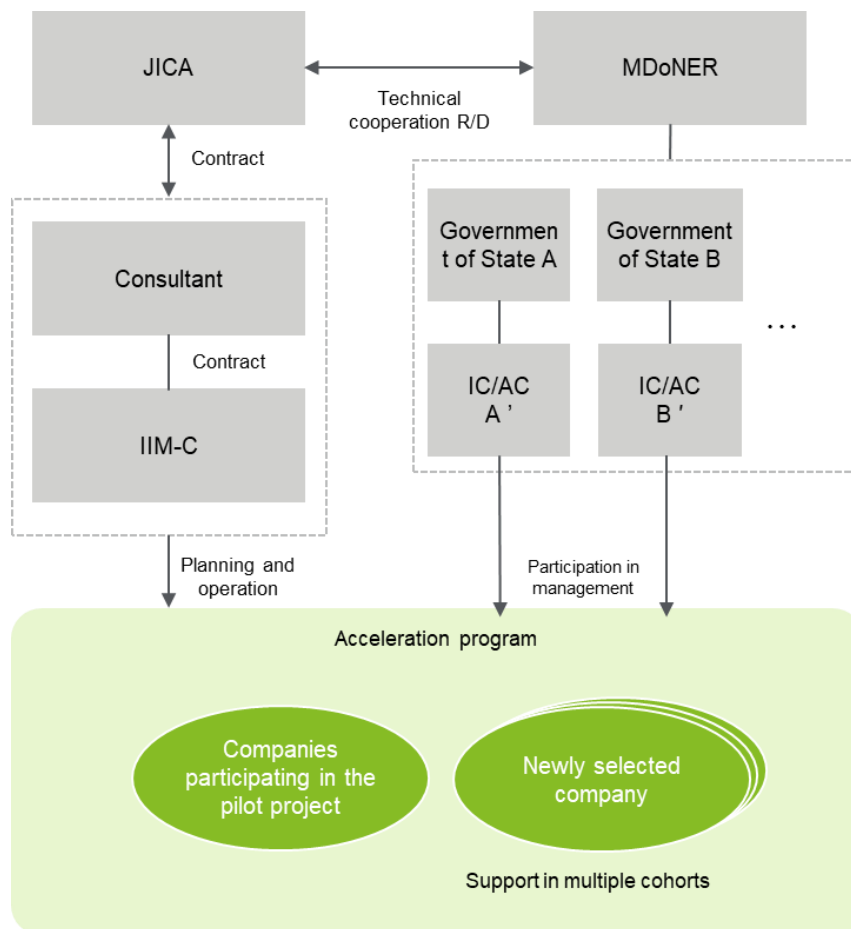


Figure 43: Possible Implementation Structure

6.3.2 Proposed cooperation program for creating and expanding role models: The two-step loan project for fostering SU and entrepreneurs in the NER

To create role models, support will be provided through two-step loans in cooperation with local public financial institutions in order to overcome the shortage of funds for SUs at high-risk stages.

Items	Details
Support form	Loan aid (two-step loan) *Another option is to consider investing in funds through overseas investments and loans.
Purpose and significance	In order to create role models for entrepreneurs and SUs and expand the base of human resources, risk money will be provided to entrepreneurs and SUs who have excellent business ideas but lack funds to realize them. The aim is to generate interest from private investors through successful examples.

Overview of Activities	<ul style="list-style-type: none"> ■ The current framework of NEDFi only covers mature SUs. To this end, support for a wide range of people will be expanded through two-step loans. ■ Establish a new fund at NEDFi to raise funds from angel investors and provide investment, loans, and grants to SUs with high potential but low maturity ■ Strengthen fund screening and management capabilities through consulting services
Executing agency	GOI/MDoNER
Partners and other stakeholders	MDoNER/NEDFi
Expected effects and outputs	<ul style="list-style-type: none"> ■ Growth of fund-injected SU business ■ Acquisition of additional funds from other investors ■ Strengthening the function of public financial institutions in the NER to supply funds to SUs

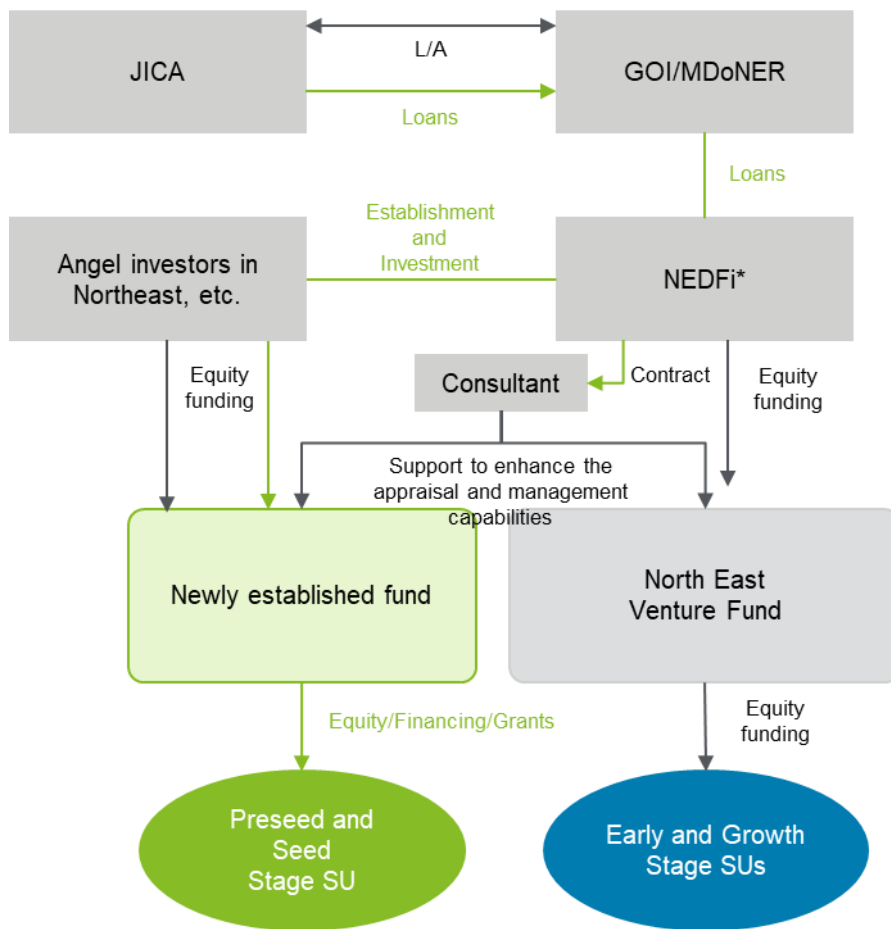


Figure 44: Possible Implementation Structure

* NEDFi recorded as profitable for the fiscal years ended March 2020 and 2021. In addition, its annual report states that INR 46,693.05 lakh of NEDFi's borrowings are all from Indian

government-affiliated organizations, and that the repayment has been made without any problems under the concessional terms of a 15 year-loan with no interest.

6.3.3 Proposed cooperation program to expand the base of human resources : Project for capacity building for SU and entrepreneurs in the NER

In order to strengthen the pipeline for expanding the pool of entrepreneurial talent, support will be provided to enhance development programs and foster a culture of entrepreneurship at major educational institutions.

Items	Details
Support form	Technical cooperation project
Purpose and significance	Strengthening the capacity to supply human resources for entrepreneurs at universities and other educational institutions in the NER, which produce excellent human resources but have a limited pipeline of human resources for entrepreneurs
Overview of Activities	<ul style="list-style-type: none"> ■ Curriculum formulation/ revision of entrepreneur development courses/ programs ■ Implementation of training programs to create role model candidates from universities ■ Assuming collaboration with IIE, which has an achievement in human resource development in the region ■ Potential companies are nominated as candidates for local acceleration programs. ■ Conducting events to foster entrepreneurial culture and build entrepreneurial communities
Executing agency	MoE/ Major Universities in the NER
Partners and other stakeholders	<ul style="list-style-type: none"> ■ IIE ■ Leading angel investors in the NER ■ Japanese universities with expertise in supporting entrepreneurs (For example, Tokyo University and Kyushu University) ■ Large companies, including Japanese companies (possible candidates for matching)
Expected effects and outputs	<ul style="list-style-type: none"> ■ Strengthening entrepreneurship development capabilities at universities ■ Increasing number of aspiring entrepreneurs among university graduates ■ Creation of Success Cases through University-originated SU

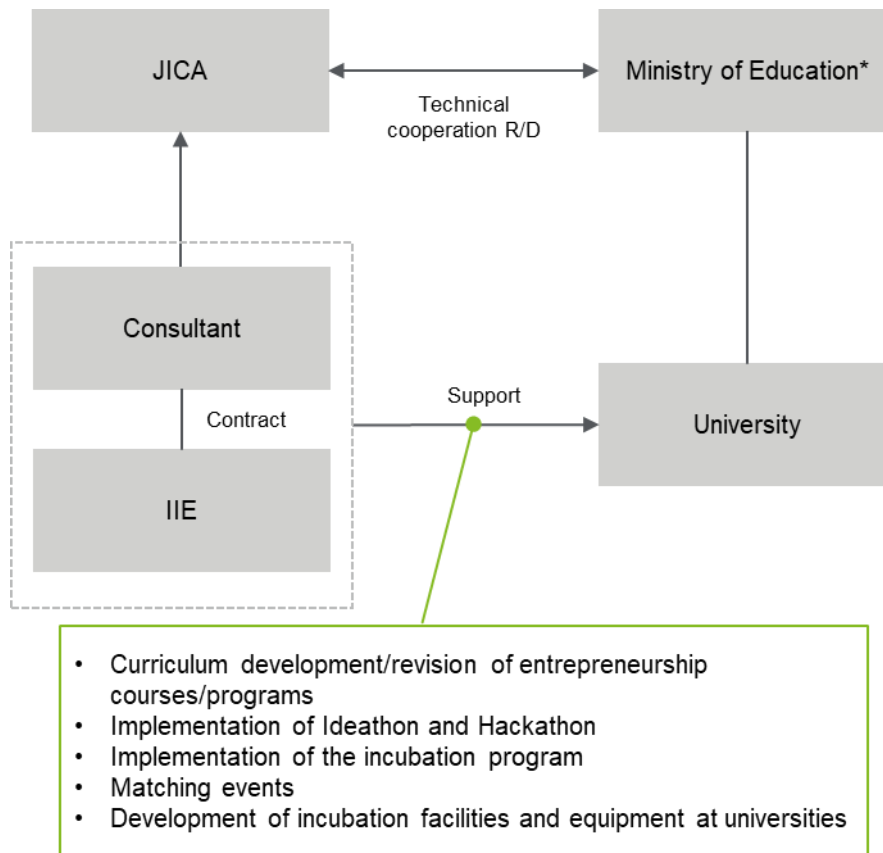


Figure 45: Possible Implementation Structure

*MoE's higher education department covers universities and institutes.

Because IIT-Hyderabad is the implementing agency for “Campus Development Project of Indian Institute of Technology, Hyderabad”, it could be possible that the universities and institutes to be the implementing agency.

On the other hand, while IITs such as IIT-Guwahati are listed under the jurisdiction of the Ministry of Higher Education, IIT-Hyderabad is not listed. Therefore, each IIT may have different statute and it is necessary to confirm the appropriate implementing institution for each target university or institute.

6.3.4 Proposed cooperation program to expand the base of human resources: Project for capacity building for SU and entrepreneurs in the NER

Enhance the ability of educational institutions to supply entrepreneurial human resources in terms of hardware by supporting the development of incubation facilities and equipment at universities.

Items	Details
Support form	Loan Aid (Project Loan)

Purpose and significance	Strengthening the capacity to supply human resources for entrepreneurs at universities and other educational institutions in the NER, which produce excellent human resources but have a limited pipeline of human resources for entrepreneurs
Overview of Activities	<ul style="list-style-type: none"> ■ Establishment of incubation facilities and equipment necessary for entrepreneurial support activities in universities ■ Facilities Research and procurement support for the design and construction of co-working spaces, prototyping facilities, laboratory facilities, etc. ■ Equipment Research and procurement support for the development of prototyping equipment and experimental equipment ■ Support for Entrepreneurs at Universities <p>*It is also possible to combine this project with the technical experts mentioned on the previous page as a supplementary project to ODA loans.</p>
Executing agency	GOI
Partners and other stakeholders	MoE/ Major universities in the NER (Example IIT-Guwahati, IIM Shillong)
Expected effects and outputs	<ul style="list-style-type: none"> ■ Strengthening entrepreneurship development capabilities at universities ■ Increasing number of aspiring entrepreneurs among university graduates ■ Creation of Success Cases through University-originated SU

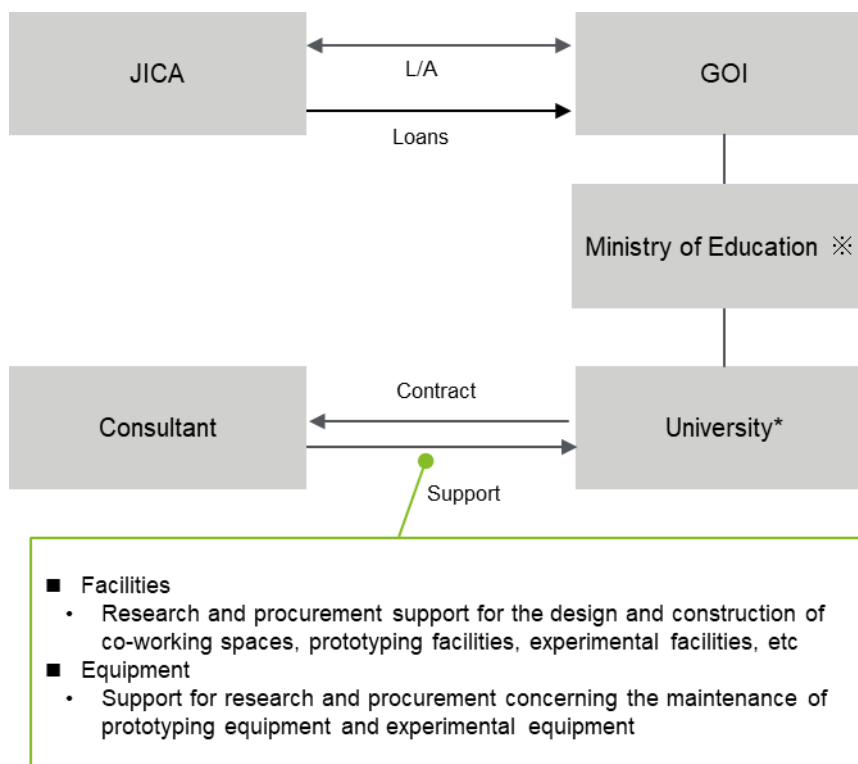


Figure 46: Possible Implementation Structure

* MoE's higher education department covers universities and institutes. Because IIT-Hyderabad is the implementing agency for a technical cooperation project, "The Project for Future Researchers at IITH to Enhance Network Development with Scholarship of Japan", it could be possible that the universities and institutes to be the implementing agency. On the other hand, while IITs such as IIT-Guwahati are listed under the jurisdiction of the Ministry of Higher Education, IIT-Hyderabad is not listed. Therefore, each IIT may have different statute and it is necessary to confirm the appropriate implementing institution for each target university or institute.

6.3.5 Proposed cooperation program for enhancing cooperation among key players: The project for strengthening SU communities in the NER

To support the creation and operation of a framework for strengthening cooperation among key players in the ecosystem in the NER.

Items	Details
Support form	Technical cooperation project
Purpose and significance	Collaboration between SUs and key players supporting them in the ecosystem in the NER will be strengthened
Overview of Activities	<ul style="list-style-type: none"> ■ Support the establishment of the Northeast Innovation Network (tentative name) as a framework for connecting disparate players and resources within the NER ■ Set up an online platform to collect and disseminate information on promising SUs from the Northeast, major events held in the region, cooperation programs, etc. ■ Gradually shift to autonomous operation by local ecosystem players through technology transfer with JICA supporting operation for a certain period ■ In particular, when it is necessary to establish a base in a local area, support will be provided for the development of facilities, etc.
Executing agency	MDoNER, FINER, IIE
Partners and other stakeholders	State governments, universities, major ICs/ACs, investors, etc., in the NER
Expected effects and outputs	<ul style="list-style-type: none"> ■ Increasing efforts based on cooperation among broader players in the region ■ Increased access to SU-supported resources in the region ■ Increased collaboration with players outside the region

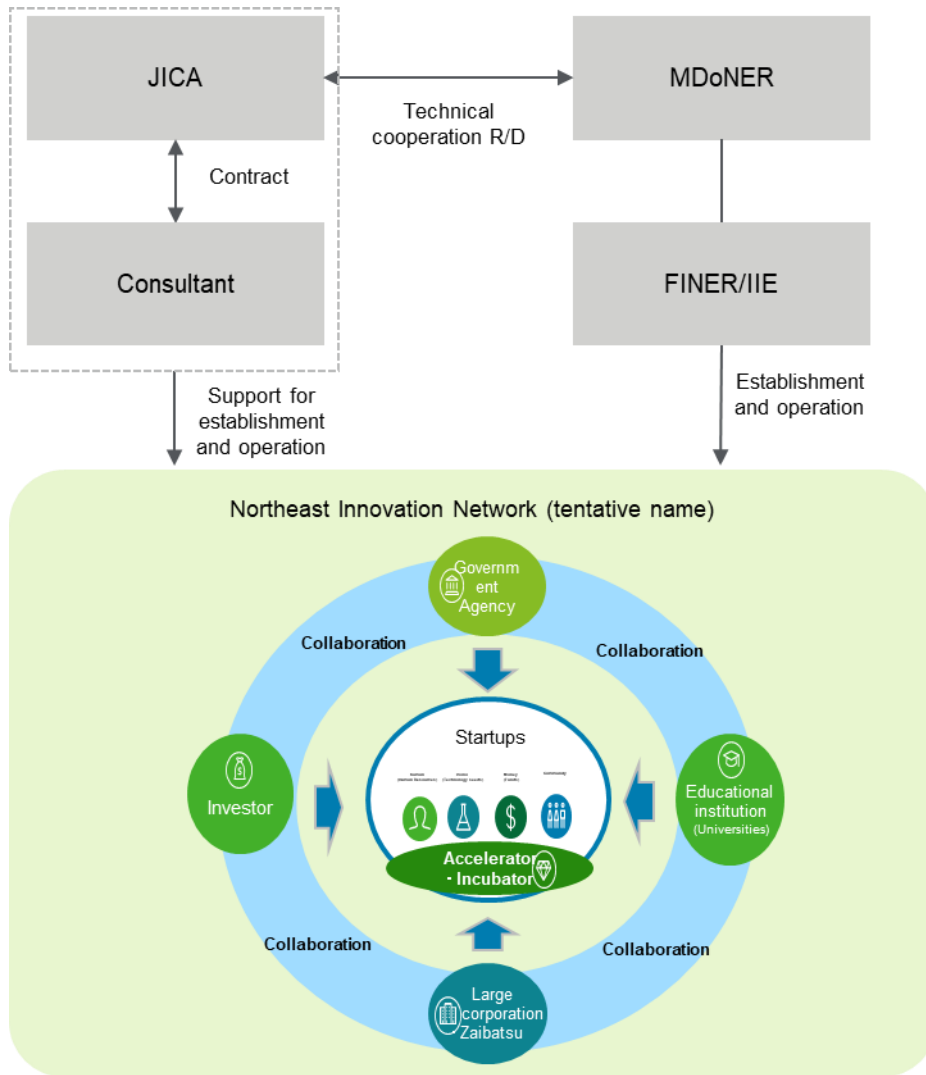


Figure 47: Possible Implementation Structure

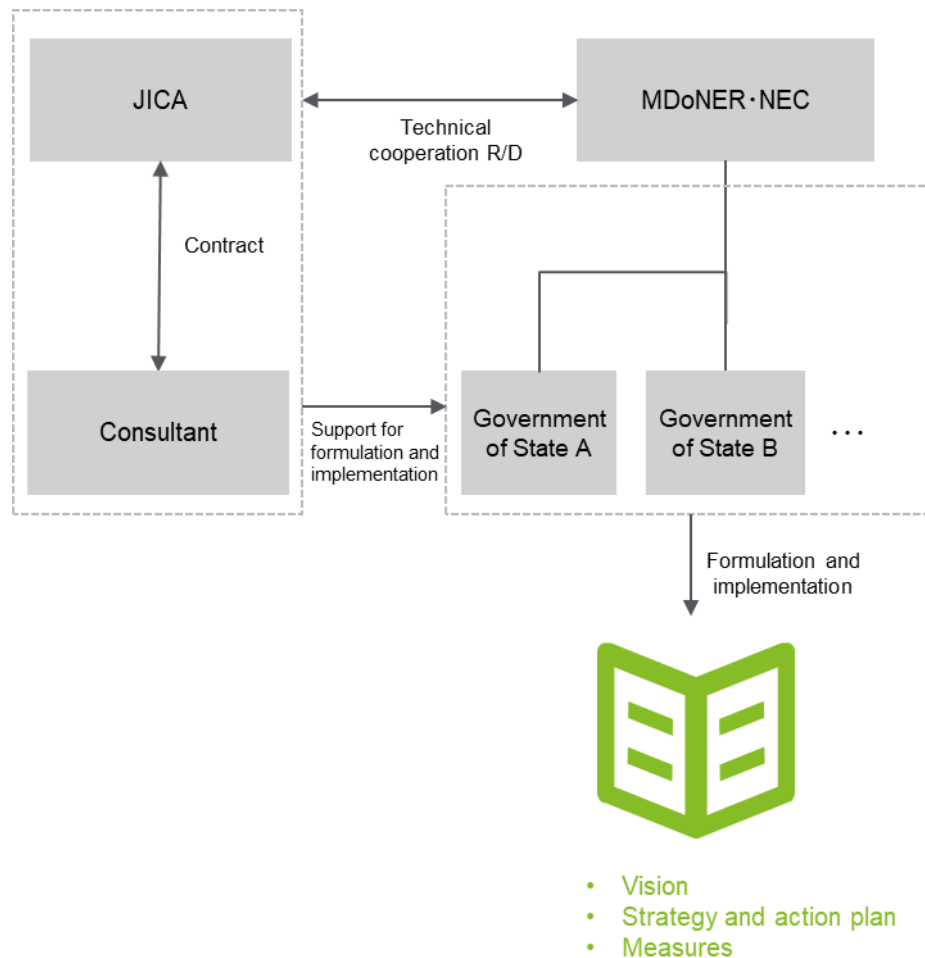
6.3.6 Proposed assistance program for attracting extraterritorial players: Project for promoting investment in the NER

Support the development and implementation of strategies to attract a small number of investors and major corporations from outside the region.

Items	Details
Support form	Development planning and research type technical cooperation
Purpose and significance	Establish visions, strategies and specific measures to attract players from outside the NER as a "place for entrepreneurship"
Overview of Activities	<ul style="list-style-type: none"> ■ Concept of vision based on the strengths of the NER and precedents in the ecosystem in other regions including regional cities

	<ul style="list-style-type: none"> ■ Formulation of strategies and action plans to attract investors, large corporations and other external players ■ Consideration of the direction of ecosystem branding unique to the NER ■ Initiatives to attract the necessary software and hardware and arrangement of the business environment ■ Implementation support based on policies and measures formulated through the above
Executing agency	MDoNER, NEC
Partners and other stakeholders	State governments of the NER, major educational institutions, ICs/ACs, investors, large enterprises, etc., in the NER
Expected effects and outputs	Increasing number of extraterritorial players expanding into the NER as a place of entrepreneurship

Figure 48: Possible Implementation Structure



Appendix 1

1. Assam

Assam is the most prominent state in that the state meets the four basic conditions required for ecosystem building.

(A) Government commitment

The evaluation in this section is mainly based on the interview with the Government of Assam.

(a) The Government of Assam's interest in building an ecosystem: A-

The top officer of startup policies comprehended the current status of the ecosystem, including achievements of the NEST project. Moreover, he has a good relationship with other team members in that he quickly arranged another interview with them for JICA's study team. An alarming point lies in that he leaves the implementation of these policies to his subordinates.

(b) The Government of Assam's capability: B+

In the interview with the Government of Assam, the top officer gave JICA study team an impression that he was a reliable person with leadership. The competencies of his subordinates are unknown because they hardly discussed with JICA study team.

(c) Achievements of startup policies: A-

The Government of Assam implemented relatively a variety of actions in the Assam startup policy 2017. For example, the state government established an incubation institution (NEST), managed startup projects and offered incentives for entrepreneurs. The scale of these services was small, which can be listed as a challenge for the startup policy.

(B) Sources of human resources

The evaluation in this section is mainly based on the interview with the Assam Startup.

(a) Soft infrastructure: A

The Assam Startup provides mentorship, capacity building, training, and crucial network connecting services to startups. This institution also collaborates with the IIM-CIP.

(b) Hard infrastructure: A

The Assam Startup prepares co-working space for entrepreneurs. Also, this institution provides incubation space partnered with the IIM-CIP.

(c) Financing scheme: A

The Assam Startup has financial schemes, which have been given to 231 enterprises supported by the IIM-CIP. (as of 23.3.2021).

(d) Number of supported startups: A

The Assam Startup has conducted 93 capacity building programs. 39 enterprises supported by the institution succeeded in obtaining funds. (as of 23.3.2021)

(C) Market access: B+

The sectors supported by the Government of Assam include tea and food processing based on the interview with the state government, which matches potential industries explained in the section 2.1.5.2. Additionally, the NIT Silchar supports startups in industries with emerging technologies such as IT or AI.

(D) IT infrastructure: A-

The IT infrastructure in Assam is better than the other states in the NER, which was mentioned in interviews with stakeholders.

2. Manipur

Manipur is the third most prominent state from the following viewpoints. The state government possesses a systematic startup policy, which has been progressing, and sources of human resources and finance schemes are relatively enough. On the contrary, IT infrastructure is less sufficient than other states in the NER.

(A) Government commitment

The evaluation in this section is mainly based on the interview with the Government of Manipur.

(a) The Government of Manipur's interest in building an ecosystem: B+

The top officer comprehended achievements of and challenges for startup policies and explained them in detail to JICA study team, which can be regarded as a proof of the government's strong commitment. However, implementation of these policies seems left to Startup Manipur.

(b) The Government of Manipur's capability: B+

The top officer possesses strong leadership in that he proposed JICA study team to have another interview with Startup Manipur and arranged the interview quickly. Additionally, the state government seems to have ability to analyze the current status of its ecosystem because its recognition for challenges of building an ecosystem in Manipur matched that of other interviewees. The competencies of staffs were unknown because they did not attend the interview.

(c) Achievements of startup policies: B

The Manipur Startup Policy 2016 is the first state startup policy in the NER states. The policy can be called unique in that the incentives/assistance provided by the startup policy vary depending on development stages. However, achievements of these incentives/assistance are unclear based on the interview with the state government.

(B) Sources of human resources

The evaluation in this section is mainly based on the interview with the Startup Manipur.

(a) Soft infrastructure: B+

The Startup Manipur provides technical supports to entrepreneurs in collaboration with the Central Manipur University and Institute of Cooperative Management. The Startup Manipur is also seeking for a tie-up with The Indian Institute of Management Shillong.

(b) Hard infrastructure: B

The Startup Manipur does not possess any hard infrastructure, but it collaborates with the Central Manipur University and the Institute of Cooperative Management to provide the infrastructure.

(c) Financing scheme: A-

The Startup Manipur has financial schemes combining loans with grants for entrepreneurs in an idea or revenue stage.

(d) Number of supported startups: A-

The Startup Manipur provided financial aids to 909 startups. (as of 8.3.2021)

(C) Market access: B

The sectors supported by the Government of Manipur include agriculture and tourism based on the interview with the state government, which matches potential industries explained in the section 2.1.6.2. On the contrary, few startups supported by the Startup Manipur advance in emerging areas.

(D) IT infrastructure: C

Though the Government of Manipur set an IT special economic zone, IT infrastructure is less sufficient than the same in the other states in the NER, according to the interviews with stakeholders.

3. Meghalaya

Meghalaya is the second most prominent state in that the state government set a systematic startup policy (PRIME) and multiple sources of human resources. However, achievements of the PRIME are unclear because not enough time has passed since the policy started.

(A) Government commitment

The evaluation in this section is mainly based on the interview with the Government of Meghalaya.

(a) The Government of Meghalaya's interest in building an ecosystem: A-

The top officer leads startup policies and started concrete initiatives, such as the PRIME. Supporting approximately 50,000 entrepreneurs through the MIE scheme in a decade is a remarkable achievement.

(b) The Government of Meghalaya's capability: B+

Setting the interview with the state government in a shorter period of time than the other states indicated its passion for building an ecosystem. The PRIME is a systematic policy leveraging past experiences of supporting entrepreneurs, which shows maturity of the plan. The competencies of staffs were unknown because they did not attend the interview.

(c) Achievements of startup policies: A-

The PRIME scheme was launched in the Meghalaya Entrepreneurship Promotion Strategy 2020-2025. In this scheme, the PRIME-HUB is to be set at each district and various services depending on development stages are prepared. However, achievements of this scheme are unclear because not enough long time has passed since the policy started.

(B) Sources of human resources

The evaluation in this section is mainly based on the interview with the Indian Institute of Management Shillong (IIM Shillong).

(a) Soft infrastructure: A-

The IIM Shillong provides technical supports ranging from for entrepreneurs in an idea stage to for those in a scale-up stage. These services are not limited for students in the IIM Shillong. The institution also collaborates with stakeholders, such as the Federation of Indian Chambers of Commerce and Industry.

(b) Hard infrastructure: C

The IIM Shillong operates on a provisional campus and does not possess hard infrastructure.

(c) Financing scheme: C

The IIM Shillong does not set any financial scheme.

(d) Number of supported startups: N/A

The information about the number of supported startups was unknown.

(C) Market access: B

The sectors supported by the Government of Meghalaya include agriculture based on the interview with the state government, which matches potential industries explained in the section 2.1.5.2. As for emerging areas, including IT, information was unknown.

(D) IT infrastructure: B

A stakeholder mentioned that internet connectivity in the Meghalaya state is better than other states in the NER, though the statistics in the section 2.2.1.8. does not demonstrate so.

4. Mizoram

The Government of Mizoram and academic institutions struggle to develop an ecosystem. However, their efforts do not make smooth progress, as represented by the collaboration of the state government with IIM-CIP, which was halted due to COVID-19.

(A) Government commitment

The evaluation in this section is mainly based on the interview with the Government of Mizoram.

(a) The Government of Mizoram's interest in building an ecosystem: B-

The current status of industrial promotions and startup policies were explained in detail to JICA study team. However, the top officer did not attend the interview.

(b) The Government of Mizoram's capability: B+

The explainer possessed leadership in that he answered questions in partner with his subordinate. Moreover, the state government has ability to analyze the current status of its

ecosystem because its recognition for challenges for building an ecosystem in Mizoram matched that of other interviewees.

(c) Achievements of startup policies: B-

The Mizoram Entrepreneurship & Startup Policy, 2019 is in the final stage of approval and has not been finalized yet. Furthermore, a tie-up with IIM-CIP for incubation support to startups has been lost during COVID-19.

(B) Sources of human resources

The evaluation in this section is mainly based on the interview with the National Institute of Technology (NIT) Mizoram.

(a) Soft infrastructure: B+

The NIT Mizoram provides mentoring services and technical assistance to entrepreneurs. The institution also supports them to register intellectual property rights in terms of both administrative and financial aids. However, its academic curriculum does not include business courses.

(b) Hard infrastructure: B-

The NIT Mizoram possesses an incubation center, but it accommodates limited numbers of students because the institution operates in a provisional building.

(c) Financing scheme: B

The NIT Mizoram has both loan scheme for its students and also services which introduces the students to other invest institutions, such as the National Innovation Foundation.

(d) Number of supported startups: C

The NIT Mizoram has supported 4 startups. (as of 12.2.2021)

(C) Market access: B

The sectors existing startups focus on are agriculture and handloom, which matches potential industries explained in the section 2.1.5.2. On the contrary, few startups advance in emerging areas, according to the interview with the NIT Mizoram.

(D) IT infrastructure: C

The level of IT infrastructure in Mizoram is lower than those of the other states in the NER based on the statistics in the section 2.2.1.8.

5. Nagaland

The Government of Nagaland highly commits to building an ecosystem, but both sources of human resources (universities and academic institutions) and startup supporters are scarce. As a result, promising startups have not yet emerged, and investors are still absence.

(A) Government commitment

The evaluation in this section is mainly based on the interview with the Government of Nagaland.

(a) The Government of Nagaland's interest in building an ecosystem: B+

While the interview was held twice due to a blackout, the top officer attended both the interviews. He explained in detail the challenges for industrial development and the current status of supports for startups. The Government of Nagaland launched a pilot project of entrepreneur education in collaboration with the Government of India though its scale is small.

(b) The Government of Nagaland's capability: B+

The top officer has a leadership in that he comprehended the organizational structure of supporting startups and expressed his intention to coordinate with other departments related to an ecosystem. Additionally, the state government has an ability to analyze the current status of its ecosystem because its recognition for challenges for building an ecosystem in Nagaland matched that of other interviewees. The competencies of staffs were unknown because they did not attend the interview.

(c) Achievements of startup policies: B-

The Government of Nagaland created the Nagaland Start-up Policy 2019, whose aims include the establishment of a world-class incubation center by leveraging PPPs. The Startup India ranked only the Government of Nagaland as "ASPIRING LEADER" in the NER states. The startup policy has just launched, achievements of which were unknown.

(B) Sources of human resources

The evaluation in this section is mainly based on the interview with the National Institute of Technology (NIT), Nagaland.

(a) Soft infrastructure: C+

NIT Dimapur inculcates innovation through their academic curriculum but does not have specific support for the startups.

(b) Hard infrastructure: C

It does not have hard infrastructure such as incubation center.

(c) Financing scheme: C

The NIT Nagaland do not have any financial scheme.

(d) Number of supported startups: N/A

The information about the number of supported startups was unknown.

(C) Market access: B

The sectors supported by the Government of Nagaland include food processing based on the interview with the state government, which matches potential industries explained in the section 2.1.5.2. As for emerging areas, information was unknown.

(D) IT infrastructure: B

The level of IT infrastructure in Nagaland is equal to that of the NER's average based on the statistics in the section 2.2.1.8.

6. Sikkim

Both the Government of Sikkim and academic institutions in Sikkim put less emphasis on startup supports. The Sikkim has a strong point of inviting pharmaceutical companies, but the state does not necessary leverage it in terms of building an ecosystem.

(A) Government commitment

The evaluation in this section is mainly based on the interview with the Government of Sikkim.

(a) The Government of Sikkim's interest in building an ecosystem: C+

The top officer attended the interview and explained the current status of their focal industries to JICA study team. The Government of Sikkim is the only one who prepared answers in the paper. However, the state government seems interested in receiving some economic supports from JICA rather than in supporting startups.

(b) The Government of Sikkim's capability: C

The ability to analyze challenges for industrial development is relatively low in that the Government of Sikkim pointed out concrete industrial problems inherent to the state, requiring comprehensive economic supports of JICA. Moreover, the state government do not comprehend the current status of an ecosystem in Sikkim. The competencies of staffs were unknown because they did not attend the interview.

(c) Achievements of startup policies: B-

The Government of Sikkim launched the Skilled Youth Startup Scheme in December 2020, in which approximately 100 entrepreneurs have been supported. However, supports for startups in Sikkim should be considered dawn because not enough time has passed since the launch of the scheme and incubation centers are scarce.

(B) Sources of human resources

The evaluation in this section is mainly based on the interview with the National Institute of Technology (NIT) Sikkim.

(a) Soft infrastructure: B-

The NIT Sikkim provides mentoring services to entrepreneurs.

(b) Hard infrastructure: C

The NIT Sikkim operates in a provisional building without hard infrastructure.

(c) Financing scheme: N/A

The information about financing schemes was unknown.

(d) Number of supported startups: N/A

The information about number of supported startups was unknown.

(C) Market access: B

Some of the focal industries in the Skilled Youth Startup Scheme, such as agriculture, matches potential industries explained in the section 2.1.5.2., though the industries listed in the scheme are comprehensive. The NIT Sikkim focus on nurturing startups in emerging areas, such as IT or AI. The institution pointed out possibilities of startups in Sikkim succeeding in knowledge-intensive industries like pharmaceutical industries.

(D) IT infrastructure: B

The level of IT infrastructure in Nagaland is equal to that of the NER's average based on the statistics in the section 2.2.1.8.

7. Tripura

Tripura is relatively well-equipped with IT infrastructure and also has an advantage of accessibility to Bangladesh. On the contrary, projects on startup, including startup policies, have just launched.

(A) Government commitment

The evaluation in this section is mainly based on the interview with the Government of Tripura.

(a) The Government of Tripura's interest in building an ecosystem: C+

The interview was set the earliest among the NER states and industrial promotions were explained in detail to JICA study team. However, the top officer did not attend this interview and an explainer only gave a brief outline of the startup policy because she was not in charge of the policy. Therefore, the state government's interest was unknown.

(b) The Government of Tripura's capability: B+

The explainer gave JICA study team an impression that she was a reliable person with leadership because she answered politely to questions by JICA study team and expressed her intention to coordinate with other departments related to startup policies. Additionally, the Government of Tripura overcame a challenge inherent to the state (connectivity). The competencies of staffs were unknown because they did not attend the interview.

(c) Achievements of startup policies: B-

Few achievements of the Tripura IT/ITeS Startup Scheme, 2019 and few incubation centers leads to the evaluation that an ecosystem in Tripura is dawn.

(B) Sources of human resources

The evaluation in this section is mainly based on the interview with the National Institute of Technology (NIT) Agartala.

(a) Soft infrastructure: B

The NIT Agartala provides counseling and mentoring services to entrepreneurs by use of mentors from both inside and outside. The institution also conducts an innovation workshop and facilitates participation in programs/ competitions, such as hackathon.

(b) Hard infrastructure: B

The NIT Agartala possesses a laboratory and internet space for entrepreneurs. The institution also has an incubation center by use of financial aids from the Indian Space Research Organization (the Government of India).

(c) Financing scheme: B

The NIT Agartala has financial schemes for its students.

(d) Number of supported startups: N/A

The information about number of supported startups was unknown.

(C) Market access: B

The Tripura IT/ITeS Startup Scheme, 2019 promotes eCommerce and IT enabled platform for existing industries, such as agriculture and handloom.

(D) IT infrastructure: B+

The IT infrastructure in Tripura is better than other states in the NER, as the statistics in the section 2.2.1.8. show. Interviewees also listed the internet connectivity as one of the advantages Tripura has.

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Analysis of startup ecosystem in each state and selection of states for detailed study

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1

Ecosystem's advancement is measured in the order of Assam, Meghalaya, Manipur, Sikkim, Mizoram and Tripura (in the same order), and Nagaland.

Relative assessment of the current state of the ecosystem in seven states

In order to compare the ecosystems in each state, each perspectives are evaluated as follows:

- 3 points : initiative/ development has already made some outcomes
- 2 points: initiative/ development has begun, but there is no clear outcomes
- 1 point: No initiative/ development has begun, or is in the initial stage.

Perspective	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
Human recourses	3	2	2	2	1	1	1
Tech seeds	3	2	2	1	1	2	2
Financial resources	3	2	2	1	1	2	1
Community	3	1	2	1	1	1	1
Total	12	7	8	5	4	6	5

**Number of SUs listed on Startup India's HP (Number of SUs referred to as DPIT recognized in parentheses) (as of 2021/9/30) ** * As of March 23, 2021

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2

Additional assessment was conducted in order to select the target for detailed study. As a result, Assam and Meghalaya were selected

Selection of states for detailed study

Perspective	Reason for evaluation	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
Ecosystem evaluation (60% distribution)	<ul style="list-style-type: none"> Evaluated by 1 ~ 3 points from the perspectives of human resources, tech seeds, financial resources, and communities 	12	7	8	5	4	6	5
Number of participated companies in the pilot project (20% distribution)	<ul style="list-style-type: none"> In terms of the size of the pool of companies, 2 points for states with a large number of applicants and 0 points for others. Among the applicants to the pilot project, companies from Assam accounted for 69%, Meghalaya 9%, Manipur 7%, and other states had only 1 ~ 2%. 	4	2	4	2	2	2	0
Existence of potential cooperation partner (20% distribution)	<ul style="list-style-type: none"> There is a candidate for collaboration with a university, etc.: 2 points Government's SU support organization is active and can be a candidate for collaboration partner: 2 points 	4	2	4	4	0	2	2
Overall rating (out of 20)		20	11	16	12	6	10	7

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3

Assam has the most developed SU ecosystem in the NER. Particularly, Assam Startup is working with several organizations to develop human resources and support SU business

Status of the SU ecosystem in Assam

Perspectives (Rating)	Evaluation
Human resource (3)	<p>The number of SUs is the largest in the NER. It also has one of the leading higher education institutions and is capable of developing human resources. State Government Emphasizes SU Policy as well</p> <ul style="list-style-type: none"> There are 1,780 (446) SUs * based on Startup India IIT Guwahati ranked 7th (2021) in the NIRF ranking (engineering) The state government established the Assam Startup Policy in 2017 and established the Incubation Facility (NEST)
Technology seeds (3)	<p>Assam Startup has been working with several organizations to support SUs, and several higher education institutions, including IIT Guwahati, have also supported SUs in business.</p> <ul style="list-style-type: none"> Since its establishment in 2019, Assam Startup has connected MoU with 33 support/higher education institutions to provide mentoring service IIT Guwahati, with the support of the central government, also established the Technology Incubation Centre in 2010 to support SU There are also multiple institutions of higher education that offer incubation programs, etc
Funding (3)	<p>In addition to support from the state government, there is also the possibility of partnerships with large companies to expand business, and there is also financing schemes for startup by banks.</p> <ul style="list-style-type: none"> State government provides funding support for SUs during seed and early stage (Example)Subsidies of up to 5 million INR for scale-up purpose, etc Assam Startup partners include large companies which might provide funds to startup IIT Guwahati's Technology Incubation Centre and Indian Bank, a state-owned bank, have signed a MoU to provide loans of up to INR 500 million to startup
Community (3)	<p>NEST acts as a hub for the startup community around Assam Startup</p> <ul style="list-style-type: none"> NEST operated by Assam Startup serves as a hub connecting people, money and goods by providing co-working space and holding events IT penetration rate is high among NERs

* Number of SUs listed on Startup India's HP (Number of SUs referred to as DPPIT recognized in parentheses) (as of 2021/9/30) ** As of March 23, 2021

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4

Manipur has been making early efforts to support startups, and has made progress in human resources, technology seeds, and funding. Meanwhile, the core facilities for the SU community are underdeveloped

Status of the SU ecosystem in Manipur

Perspectives (Rating)	Evaluation
Human resource (2)	<p>The number of startups is the second largest after Assam in NER. The state government has been supporting SU since early days</p> <ul style="list-style-type: none"> Startup India lists 54 SU * companies, which is medium for NER Manipur University offers undergraduate training for entrepreneurs, with 3,500 students and a national rank of 294th/885 (uniRank) The state government was the first in NER to establish the Manipur Startup Policy in 2016, aiming to create 200 SUs in 5 years, and started the Manipur Startup Scheme in 2018
Technology seeds (2)	<p>SU support organizations and universities are cooperating to provide support</p> <ul style="list-style-type: none"> Startup Manipur, a startup support organization, was established in 2016. A financial support scheme is prepared for each stage of SU, and technical support such as training and mentoring for SU is provided to selected companies in cooperation with Manipur University, etc The Centre for Entrepreneurship and Skill Development, established in 2014 at Manipur University, provides mainly SU-supported training
Funding (2)	<p>In addition to state subsidies, the state government and banks work together to promote bank lending</p> <ul style="list-style-type: none"> State government has funded 903 SUs in 5 years through Startup Manipur In addition to seed stage SUs, early stage SUs received 30% subsidies of the investment and 65% of loans from banks Large companies and VCs are not actively funding
Community (1)	<p>The construction of a hub which connects people, funds, and products has been planned, while the community is underdeveloped</p> <ul style="list-style-type: none"> The state government and Tata Technologies Ltd. (TTL) concluded a MoU in 2021 and agreed to build an incubation center in 2023 with a total cost of 2 billion INR to train 1,500 people per year 34.7% of the villages has no mobile phone network. State officials also said that the IT infrastructure was weak at the interview

*Number of SUs listed on Startup India's HP (Number of SUs referred to as DPPIIT recognized in parentheses) (as of 2021/9/30)

Meghalaya has the second largest SU ecosystem in the NER after Assam. On the community side, PRIME-Hubs could be a nodal point to connect SUs and resources

Status of the SU ecosystem in Meghalaya

Perspectives (Rating)	Evaluation
Human resource (2)	<p>Although the number of SUs is small, highly ranked higher education institutes exist, and is capable of developing human resources. The state government has been supporting startup since 2011, and efforts are deepening</p> <ul style="list-style-type: none"> Startup India shows 14 SUs * in Meghalaya IIM Shillong ranked 23rd (2021) in the NIRF ranking (business management) The state government established the Meghalaya Institute of Entrepreneurship (MIE) in 2011, to promote entrepreneurship and industry. Startup Policy was established in 2018, and in 2020, promotion and Incubation of Market Driven Enterprises (PRIME) was launched
Technology seeds (2)	<p>MIE functions as the center of industry-government-university cooperation. SU support through PRIME Hubs has begun, but few activities have been conducted</p> <ul style="list-style-type: none"> MIE works with many university and government agencies. Provide SU support services for each stage through PRIME-Hubs The PRIME program was only launched in 2020 and has a small track record
Funding (2)	<p>The State Government is working to build a network with investors while providing support to startup support agencies</p> <ul style="list-style-type: none"> State funding is more focused on SU support agencies than startup itself The state government will help financing startup by creating a network of VCs and Angel funds
Community (2)	<p>PRIME Hubs is about to be developed as a hub connecting people, products, and funds</p> <ul style="list-style-type: none"> There was little mention of its community in interviews. PRIME Hubs, on the other hand, currently has 2 operating locations, with 50 planned for construction in the future, and is expected to grow IT penetration rate is moderate among NER. Village where mobile phone network is not yet open occupies 20.4% (2018). There were also comments about good connection of the internet

*Number of SUs listed on Startup India's HP (Number of SUs referred to as DPPIIT recognized in parentheses) (as of 2021/9/30)

The partnership between the state government and university has taken Mizoram one step further from human resource perspective. On the other hand, lack of financial support for startup and absence of core facilities are obstacles

Status of the SU ecosystem in Mizoram

Perspectives (Rating)	Evaluation
Human resource (2)	<p>Although the number of SUs is small, the state government and universities are working closely to create entrepreneurs.</p> <ul style="list-style-type: none"> Startup India lists 6 SUs * Mizoram University was selected as one of the top 100 universities in India by the NIRF. Conducted Skills and Entrepreneurship training in collaboration with the Mizoram Entrepreneurship Development Centre (EDC) (30 students completed in 2019) and 20 instructors joined
Technology seeds (1)	<p>Under the process of implementing awareness activities</p> <ul style="list-style-type: none"> The Startup Policy was established in 2019, and the first step of the awareness activity (holding events such as hackathons as a part of it) is in progress. The most recent state government (EDC) and Mizoram University are in collaboration (affiliated faculties in parentheses) ① MINUTE KHAT PHEICHHAM (BIONEST Incubation Centre): 2021/6 ② Project Management Training (BioNEST Incubation Centre): 2021/3
Funding (1)	<p>Limited state support and limited funding by private sector.</p> <ul style="list-style-type: none"> State government funds through the EDC seed-stage to seed stage startups and provide limited funding to SU-supporting institutions funding from large corporations, VCs and angel investors has not been active
Community (1)	<p>The hub connecting people, money and goods is under construction and the community is underdeveloped.</p> <ul style="list-style-type: none"> Construction of the Hub is in the process of procurement in 2021, and formation is not in progress. 30.4% of villages is yet to be connected to the mobile network (2018)

*Number of SUs referred to as DPIIT recognized on Startup India's HP (as of 2021/9/26)

Nagaland has a less developed ecosystem than other states in the NER. The state government has announced support for SUs, but there is no organization to lead the effort and little progress has been made

Status of the SU ecosystem in Nagaland

Perspectives (Rating)	Evaluation
Human resource (1)	<p>The number of SUs is small, and the size of educational institutions is small. Entrepreneurship education also relies on NGOs, and there is a lack of human resources and human resource development infrastructure.</p> <ul style="list-style-type: none"> Startup India lists only 20 SUs * Nagaland University has 400 students, not ranked by NIRF In Nagaland Startup Policy 2019, the state government aims to support 500 SUs in 5 years, but currently it is not active. Entrepreneurial training also depends on NGO management
Technology seeds (1)	<p>The SU support system exists, but the implementation organization is not developed and the support menu is not sufficient.</p> <ul style="list-style-type: none"> The state government plans to support SU supporting platform agencies and incubators. However, it has not done yet. In 2018, the state government established the Innovation Hub & Space Education Centre
Funding (1)	<p>Limited state support and limited private funding</p> <ul style="list-style-type: none"> State government has been funding for seed-stage SUs and SU support agencies, but the amount is limited Lack of funding from large companies, VCs, and angel investors
Community (1)	<p>The hub connecting human resources, funds and products is not formed, and the community is underdeveloped.</p> <ul style="list-style-type: none"> There are few co-working spaces for SUs 9.4% of villages (2018) is without mobile networks

*Number of SUs referred to as DPIIT recognized on Startup India's HP (as of 2021/9/26)

Sikkim has taken a step forward in its efforts to create an ecosystem in tech seeds, funding and community. On the other hand, from the human resource perspective, the state government initiatives have just begun

Status of the SU ecosystem in Sikkim

Perspectives (Rating)	Evaluation
Human resource (1)	<p>The number of startup is small, and the ranking of higher educational institutions is not high. State support for SUs has just begun</p> <ul style="list-style-type: none"> Startup India mentions 48(7) startups* Sikkim Manipal Institute of Technology settled 251 - 300 (2020) at NIRF Ranking (Technology Division), and that is not high The Sikkim State Government is supporting youth entrepreneurship by launching the Skilled Youth Startup Scheme (SYSS) and Sikkim Entrepreneur and Economic Development (SEED) in 2020
Technology seeds (2)	<p>AIC-SMUTBI, an incubation center, is the center of industry-government-academia collaboration and provides a variety of services to young entrepreneurs</p> <ul style="list-style-type: none"> Sikkim Manual Institute of Technology established AIC-SMU Technology Business Incubation Foundation (AIC-SMUTBI) in 2018 with support from the central government The state government established SEED in 2020 to provide mentoring and incubation programs to support youth entrepreneurs
Funding (2)	<p>In addition to government support, there may be partnerships with large companies to expand operations</p> <ul style="list-style-type: none"> The State Government's SYSS provides a subsidy program to facilitate bank loans by SUs to seed SUs AIC-SMUTBI (supported by the central government) provided up to INR2.5 million in financial support for early-stage SUs. It also provides SUs with access to VCs and angel investors AIC-SMUTBI partners include large companies and may be funding SUs
Community (1)	<p>AIC-SMUTBI is developing as a hub connecting people, money and goods</p> <ul style="list-style-type: none"> AIC-SMUTBI provides a core working space and is developing as a hub connecting people, funds and ideas IT penetration is high compared with other NER states


*The number of SUs listed on Startup India's HP (the number in parentheses is the number of SUs listed as DPIIT recognized)

Tripura is making progress in terms of technology seeds. However, the ecosystem itself is at an early stage overall, and funding for startup is not sufficient

Status of the SU ecosystem in Tripura

Perspectives (Rating)	Evaluation
Human resource (1)	<p>The ranking of higher educational institutions is low, and the number of newborn startups is also small. Therefore, the talent pool remains small. The state effort has just begun and have not yet led to any results</p> <ul style="list-style-type: none"> Startup India lists only 40 startups, fewer than other states in the Northeast India Although there is a certain amount of the students belong to higher educational institute, National Institute of Technology Agartala (NITA) ranks only 92nd in NIRF ranking (engineering) (2021) The state government aims to create 100 IT-related startups over the next 5 years through the IT/ITeS Startup Scheme started in 2019, but it has not been actively working in this field
Technology seeds (2)	<p>The establishment of an incubation center led by the state government and universities has just begun</p> <ul style="list-style-type: none"> At Tripura University, Startup cell was founded in 2020. In NITA, India's first Space Technology Incubation Centre of Indian Space Research Organization (ISRO) was established in 2018, and activity has been started with the implementation of the first Bootcamp in 2021 The New generation of Innovation Network (INR1 million), which started in 2021, plans to expand facilities in the IT field to higher educational institutions
Funding (1)	<p>Subsidies to startups by the state government are limited, and private funding does not appear to be active</p> <ul style="list-style-type: none"> The state government increased the subsidy with the IT incentive scheme from 2017, and since 2019, the state government has been subsidizing POC expenses up to INR1 million by IT/Ites Startup Scheme to support startups in the seed stage No VC or bank funding data for SUs
Community (1)	<p>There is no hub at the heart of the community, but communication is in place</p> <ul style="list-style-type: none"> The number of villages without mobile networks is 2/452 (0.4%), and the communication environment is as good as that of Assam (ICC interview)


*Number of SUs referred to as DPIIT recognized on Startup India's HP (as of 2021/9/26)



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**Data Collection Study for the Strengthening of Industrial Competitiveness
in the North Eastern Region of India**
Appendix for Draft Final Report: Case study on development models in regional cities

Deloitte Tohmatsu Financial Advisory LLC



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Purpose and Perspective of Case Collection

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Collected case studies on initiatives in local cities in Japan and overseas with the aim of identifying suggestions for the Northeast Region of India to strengthen industrial competitiveness through the formation of the SU ecosystem

Purpose and perspective of case collection

Purpose of case collection	To extract useful suggestions for industrial development in the Northeast region of India from examples of initiatives in local cities in Japan and abroad where an SU ecosystem centered on entrepreneurs, startups, and SMEs has been formed and is leading or attempting to lead to industrial development
	
Main perspectives of case collection	<ul style="list-style-type: none">■ What was the trigger of the formation and development of the SU ecosystem?<ul style="list-style-type: none">➢ Who are the main key players?■ How did regional strengths and idiosyncrasies influence?■ What role has the government played/ is it playing?■ How did you overcome/try to overcome the challenges unique to local cities?

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4

Examples of Development Models in Local Cities

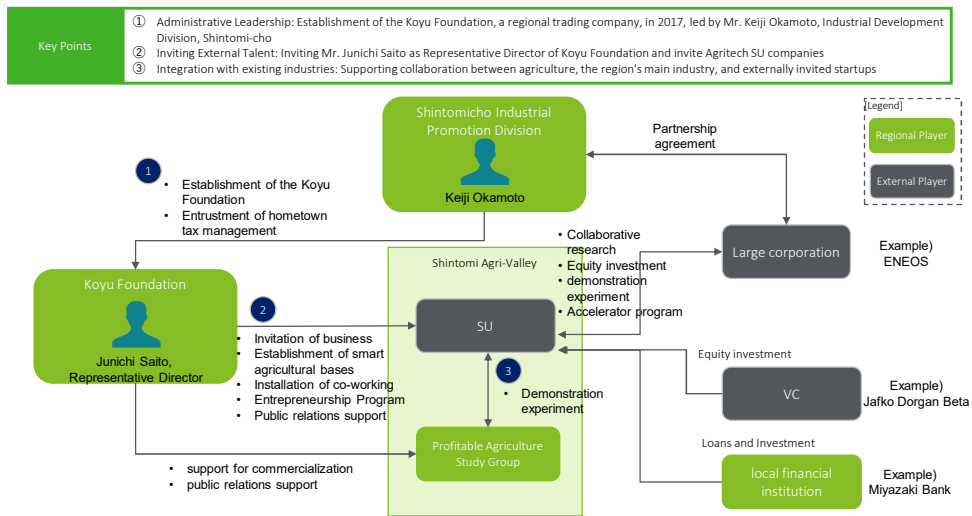
- Domestic case
 - Shintomi-cho, Koyu-gun, Miyazaki
 - Hamamatsu-city, Shizuoka
- Overseas case
 - Colorado (US)
 - Cairns (Australia)

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The town of Shintomi in Koyu County, Miyazaki Prefecture, has appointed an experienced Silicon Valley expert as a leader of a regional trading company in order to solve the aging and the shortage of workers in agriculture which is major industry of the town

Overview of Shintomi Town's Development Model



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In Shintomi Town, the Industrial Promotion Division plays a central role in establishing the Koyu Foundation, a regional trading company, attracting SU companies from outside the town, and forming an ecosystem by building cooperative relationships with local farmers engaged in advanced initiatives

History of the formation of the startup ecosystem

2014 – 2017: Koyu Foundation was established

- In 2014, Mr. Keiji Okamoto recommended the gainful town planning and proposed to the mayor the establishment of a regional trading company
- In April 2017, the Koyu Foundation, a regional trading company, was established and invited Junichi Saito as its representative director



2018 – 2019: Local Entrepreneurship Culture Development Period

- In March 2018, the Koyu Foundation concluded a partnership agreement with Miyakonojo Technical College and Shintomi Town Office
- From June to November 2018, a smart farming study group was launched by young farmers, and the Koyu Foundation established "Agritech Lab", a coworking space specializing in agriculture
- In February 2019 "Terra Smile Co., Ltd.", an agricultural business analysis service, moved its head office to Shintomi-cho.
- In September 2019, Agricultural robot development company "Agrist Co., Ltd." was established, and robots under development was broadcasted on Mezamashi TV.
- In November 2019, the Koyu Foundation established "Shintomi Agri Valley", a smart agricultural base, and "Smart Agriculture Promotion Association", a network of local, industry-government-academia collaboration



2020 – 2021: Startup Ecosystem Formation

- In April 2020, a consortium led by the Smart Agriculture Promotion Association was selected for the Ministry of Agriculture, Forestry and Fisheries Smart Agriculture Demonstration Project
- In August 2020, Koyu Foundation and AgVenture Lab signed a partnership agreement on smart agriculture support
- In October 2020, ENEOS and Shintomi Town signed a partnership agreement aimed at creating a low-carbon, recycling-oriented, and sustainable town
- In May 2021, Shintomi-cho, Panasonic, and Minami-Kyushu University concluded the "Comprehensive Partnership Agreement on Regional Revitalization and the Promotion of SDG's."

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In Shintomi Town, internal stakeholders and key players invited from outside work together to build an innovation ecosystem

Major Stakeholders

Shintomicho Industrial Promotion Division

- Keiji Okamoto
- Shintomi Town Office Industrial Development Division
 - From Shintomi-cho
 - In 1999: Joined Shintomi-cho Town Office.
 - In 2017: Established regional trading company "Koyu Foundation" out of a sense of crisis about the town's future

Profitable Agriculture Study Group

- Tetsuya Mori
- Lychee farmer
 - Branding Lychee with Koyu Foundation

Fukuyama Mochiujji

 - Agritech farmer
 - Introduction of AGRIST technology in the field



Junichi Saito

- Representative Director, Koyu Foundation/ Representative Director and CEO, AGRIST Corporation
 - Returned from Silicon Valley IT Venture in the United States
 - Activities based on the vision of solving local and social issues through business mechanisms
 - Current position since 2017

ENEOS

- In 2020, a partnership agreement was concluded with Shintomi Town to create a low-carbon, recycling-oriented, and sustainable town
- Demonstrate agricultural support robots and solar power generation with farming with AGRIST

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Examples of Development Models in Local Cities

- Domestic case
 - Shintomi-cho, Koyu-gun, Miyazaki
 - Hamamatsu-city, Shizuoka
- Overseas case
 - Colorado (US)
 - Cairns (Australia)

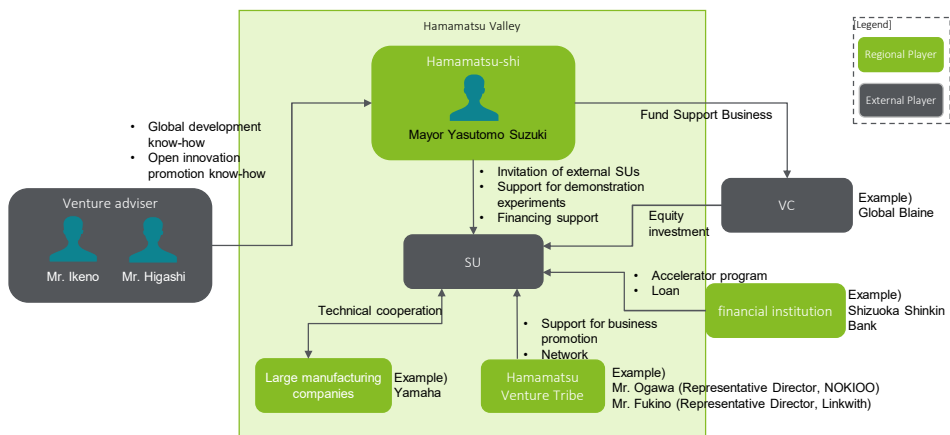
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Hamamatsu City aims to create a growth industry that will become a pillar of the local economy along with the transportation equipment industry, which is a major industry. Mayor Yasutomo Suzuki takes the lead in promoting building an ecosystem

Overview of Hamamatsu City's Development Model

Key Points

- ① Administrative Leadership: Promote the Hamamatsu Valley Initiative led by Mr. Yasutomo Suzuki, Mayor of Hamamatsu City since 2007
- ② Creating contact points with external players: Inviting Mr. Higashi and Mr. Ikeno as venture advisors and fund support business to attract external VCs
- ③ Integration with existing industries: Inviting external SUs that are compatible with large local manufacturing companies



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Hamamatsu City, led by the mayor, formed an ecosystem by attracting SU companies, advisors, and VCs from outside, and by continuing to disseminate information about the venture

History of the formation of the startup ecosystem

2007 – 2012: Ecosystem Concept Period

- In 2007, Yasutomo Suzuki was elected mayor of Hamamatsu.
- In 2012, The Hamamatsu Regional Innovation Promotion Organization was established



2016 to 2017: SU invitation and establishment period

- In 2016, the Hamamatsu Valley Concept was promoted
- In 2016, the Hamamatsu Business Information Center was established and invited SUs from outside
- In 2016, Hamamatsu Venture Union was established, and activities such as networking of venture companies, venture management academy, hackathon, etc started
- In 2016, a new project was launched under the theme "New Medical Photonics Technologies Created by Hamamatsu, a City at the Edge of Light" in response to the Ministry of Education, Culture, Sports, Science and Technology's Regional Innovation Ecosystem Formation Program
- In 2017, a venture support group was established in the Industrial Development Division of Hamamatsu City
- In 2017 Hamamatsu Venture Tribe, a community of entrepreneurs, was established



2019 – 2020: Startup Ecosystem Formation

- In 2019, establishment of "HAMACT! (HAMACTO)" a website to support the expansion and growth of venture companies (VB)
- In 2019, establishment of the "Fund Support Business", groundbreaking activity to attract venture capital investment to local governments and provide grants equivalent to the amount invested
- In 2020, Hamamatsu City was designated as a global hub city by the Cabinet Office's "Integrated Innovation Strategy 2020."

Source: Haines, T. (2016) "Developing a Startup and Innovation Ecosystem in Regional Australia", Technology Innovation Management Review, 6 (6), pp. 24-32

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Building an innovation ecosystem led by the mayor and inviting external participants in Hamamatsu

Major Stakeholders

Mr. Suzuki Yasutomo

- Mayor of Hamamatsu
 - Born in Hamamatsu City, Shizuoka Prefecture in 1957
 - Joined Matsushita Institute of Government and Economics (the first generation)
 - Became CEO of Stella Planning in 1985
 - First elected to the House of Representatives in June 2000
 - Current position since May 2007

Hamamatsu Venture Tribe

- Mr. Kenzo Ogawa
 - Representative Director, NOKIOO Co., Ltd.
 - Hamamatsu Venture Tribe Founders and Representatives
- Mr. Gōji Fukino
 - Representative Director, Linc Wiz Co., Ltd.
 - Hamamatsu Venture Tribe Founders

{Legend}

Regional Player

External Player

Certified VC (23 companies certified in FY 2020)

- Global Brain Corporation
 - Certified VC since 2019
- Shizuoka Capital Co., Ltd.
 - Certified VC since 2019
- Incubate Fund Co., Ltd.
 - Certified VC since 2020

Hamamatsu City Venture Support Advisor

- Mr. Fumiaki Ikeno
 - Stanford University principal investigator and physician
 - Connecting Hamamatsu City with Silicon Valley and other overseas markets
- Mr. Hironobu Higashi
 - Principal, Japan Research Institute, Inc.
 - Advice on promotion of open innovation and support for start-ups and ventures

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 - Cairns (Australia)

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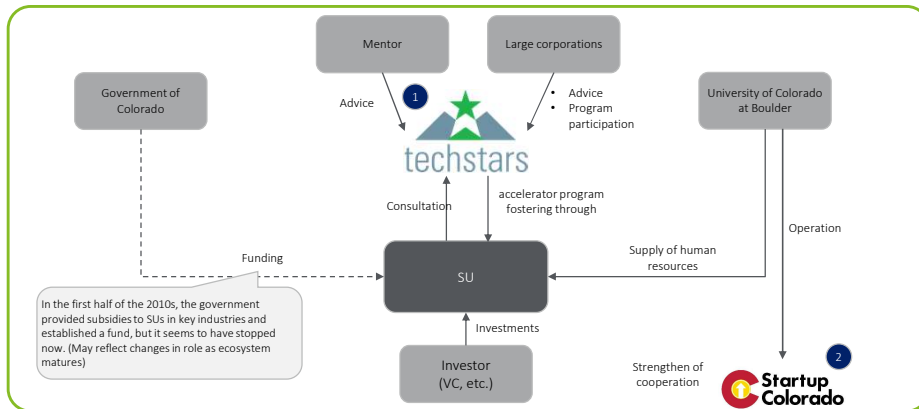
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In Colorado, accelerators like the world's leading Techstars are helping tech startups and forming an ecosystem

Overview of Colorado's development model

Key Points

- ✓ Human Resources: The University of Colorado at Boulder turns out entrepreneurs through its unique entrepreneurship program
- ✓ Funding: Accelerator-incubated startups attract investment from local and international VCs
- ✓ Tech seeds and Community: Startup Colorado, an entrepreneurship program at the University of Colorado at Boulder, connects disparate resources across the state to strengthen collaboration between players



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Techstars Improves Success Probability with Mentor-Driven Acceleration Program

Global Accelerator from Colorado: Techstars

- **4 entrepreneurs founded in Colorado in 2006**
 - Founded by David Cohen, David Brown, Brad Feld and Jared Polis on the idea of David Cohen and David Brown based on [the need for trusted mentors to advise in their own entrepreneurial experience.](#)
- **Run a mentor-led acceleration program**
 - Three-month acceleration program four times a year in nine cities around the world (Boulder, Seattle, Chicago, New York, Boston, Austin, San Antonio, Berlin, London)
 - Have an edge of **1,500+ mentors global network**

Basic Flow of the Acceleration Program



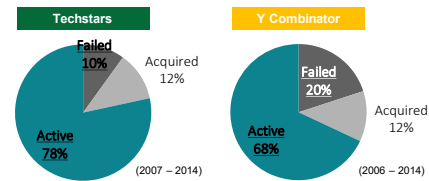
Source: Based on interviews, Techstars website, and other public information

Techstars with outstanding survival rates for incubators

- **Carefully selected approximately 10 elite companies for 1 program (1% of all applicants)**
 - Up to \$18,000 per company (+ optional \$100,000 convertible bond)
 - Techstars buy 6% stake in supporting company
- **Only high quality, "entrepreneurial first" mentors**
 - The [Mentor Manifesto](#), which defines the values that Techstars mentors should hold, states that [the success of an entrepreneur comes first without asking for rewards.](#)

Companies incubated by Teachers have high survival rates and Teachers produce attractive companies

- Better survival than Y Combinator, the nation's largest accelerator
- Techstars-backed companies raise \$1.7 billion (average \$3 million +)



Comparison of survival rates of supporting companies

*In general, the probability of a company surviving in the U.S. in the first six years of operation is 47% in manufacturing, Retail, 38.4%, service, 40%

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Colorado's startup ecosystem has matured in stages, beginning with the establishment of national laboratories and MNC R&D sites in the 1950s.

History of the Maturity of the Startup Ecosystem in Colorado

1950s - mid 1990s: early days

- In the 1950s, the creative class gathered through the creation of national labs and R & D centers at IBM and HP
- High quality of life attracted people from outside the state

Mid-1990s to around 2000: Formative period

- Gathered human resources accumulated entrepreneurial experience through the dot-com bubble as first-generation entrepreneurs
- In 2006, Colorado entrepreneur Brad Feld co-founded Techstars with David Cohen and 2 others

Mid-2000s to Present: Development Period

- Accelerator-centric second generation has matured the startup community
- More accelerators centered around Teachers has led to better success and an increase in the number of entrepreneurs
- The University of Colorado at Boulder began working with the community of entrepreneurs, VCs and others on human resource development.
- With the development of the SU ecosystem, the state's economy is growing, particularly in industries utilizing advanced technologies such as AI

Source: Brad Feld, Startup Communities: Building an Entrepreneurial Ecosystem in Your City (2012)

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Techstars founder is a first-generation entrepreneur who experienced success and failure in the Dot-com bubble

Increase in venture firms following the Dot-com bubble

- Leading Colorado venture company during the dot-com bubble of the mid-1990s
 - Email Publishing
 - ✓ Later acquired by Message Media
 - Raindance Communications
 - ✓ Listed in 2003, acquired by West Corporation
 - BlueMountainArts.com
 - ✓ Excite Acquired
 - Service Metrics
 - ✓ Exodus Acquired
 - Avitek
 - ✓ Acquired by BEA
- ▼
- After the dot-com bubble burst around 2000, the market stagnated for a while, but **first Generation, who started businesses during the dot-com bubble, became the driving force for future development.**
 - For example, Jared Pollis, founder of BlueMountainArts.com, founded Techstars in 2006 with David Cohen, Brad Feld, and others (See previous page)

Colorado Entrepreneur/Venture Capitalist: Brad Feld



Brad Feld
Partner of Colorado VC Foundry Group and co-founder of Techstars

- Career
 - Started business while studying at MIT. He moved to Boulder in 1995 and invested in technology startups as an angel investor
 - Founded Techstars in 2006 with David Cohen and 3 others
- Major achievements
 - In his book "Startup Communities", he developed the **Boulder Theory** for building startup ecosystems in cities
 - ✓ **Entrepreneurs should be community leaders** (not VCs or government service providers)
 - ✓ Also reflected in Techstars' Mentor Manifesto
 - Aggressively disseminate entrepreneurial and VC trends and issues on blogs and social media
 - Active participation in entrepreneurial community activities through events at the University of Colorado

Source: Brad Feld "Startup Communities: Building an Entrepreneurial Ecosystem in Your City"

High QOL is one of the factors that attracted the best entrepreneurs that created Techstars

Quality of Life in Colorado



Attractions of Colorado which fascinates talent	Rich natural environment	Business environment
	<ul style="list-style-type: none"> ■ Famous for its magnificent Rocky Mountains, it attracts many hikers in summer and skiers in winter 	<ul style="list-style-type: none"> ■ Denver ranked # 1 in Forbes' 10 Best Cities for Business and Careers (2015) <ul style="list-style-type: none"> ➢ Evaluate accessibility, concentration of technology industry, etc.
	Good security	High educational/cultural standards
	<ul style="list-style-type: none"> ■ Forbes named Colorado Springs "one of the 10 safest cities in America" in 2012 	<ul style="list-style-type: none"> ■ The percentage of adults with a college degree or higher was 37.0%, second in the nation behind Massachusetts (2014) ■ The Denver Art Museum is one of the largest museums in the United States

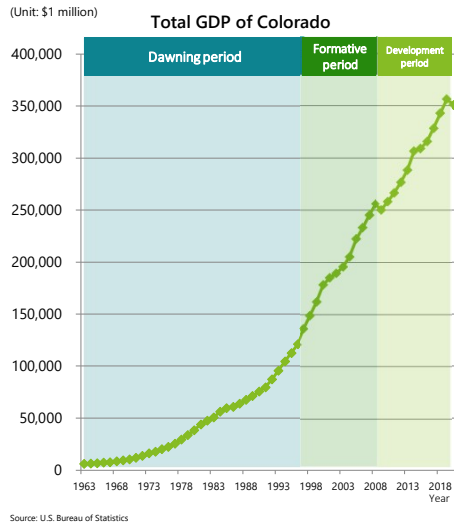
Source: Forbes, "America's Top 25 Towns To Live Well," Colorado Department of Tourism

Rank	City Name	State Name
1	Boulder	Colorado
2	Doral	Florida
3	Fairfax	Virginia
4	Mountain View	California
5	Cupertino	California
6	Newton	Massachusetts
7	Columbia	Maryland
8	Rockville	Maryland
9	Coral Gables	Florida
10	Foster City	California
11	Belmont	California
12	Hillsborough	California
13	North Potomac	Maryland
14	Santa Monica	California
15	Sandy Springs	Georgia
16	Aliso Viejo	California
17	Germantown	Maryland
18	Evanston	Illinois
19	Davis	California
20	Silver Spring	Maryland
21	Tustin	California
22	Sugar Land	Texas
23	Potomac	Maryland
24	Santa Fe	New Mexico
25	Kendall	Florida

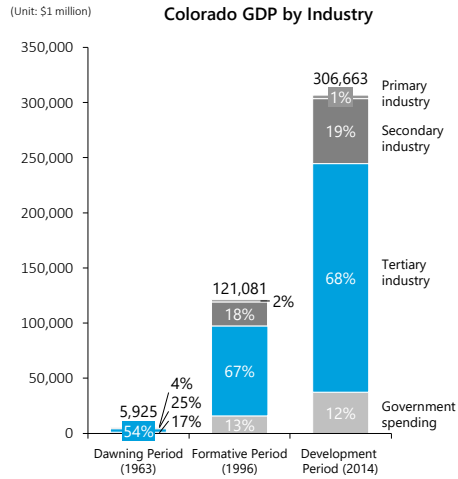
Source: Forbes "Top 25 Best Places to Live in America" (2009)

Along with the development of the startup ecosystem, industries expanded led by tertiary industries as a driving force

Colorado GDP Trends



Changes in Industrial Structure from the Dawn to the Development stage



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Startup Colorado, a program from the University links human resources, tech seeds, and funding which are dispersed in rural cities and strengthens the entrepreneurial of Colorado at Boulder, community

Startup Colorado strengthens collaboration among key players in the state

- Overview
 - Community Assistance Program from the University of Colorado Boulder Law School
- Purpose
 - Create an environment where entrepreneurs can access funding, government, academic institutions, and mentors in the state
 - Establishing a network of entrepreneurs by organizing events and creating groups for each industry, region, and entrepreneur attribute
- Main activities
 - Co-Sponsoring event with Techstars
 - Conference for female entrepreneurs
 - Study meetings to raise funds



Source: Startup Colorado

Other Initiatives to Build Entrepreneurial Communities

Startup Weekend

Startup Event "Creating a Startup in 54 Hours"

- Startup Weekend, now available in countries including Japan, launched in Boulder in 2007
 - It started with the idea of Andrew Hyde, who helped Techstars
- Designers, programmers, marketers, etc. form teams on the spot and create products in 54 hours
- In 2015, Techstars acquired Startup Weekend operator UpGlobal and became part of the Techstars program

Boulder Young Professionals

Regular meetings between young entrepreneurs in Colorado to discuss issues for the entrepreneurial community

- Started as "Boulder 2140" in 2009
- A program run by the Boulder Chamber of Commerce to connect young professionals with the community
- About 3,000 people belong to it
- Holding about 40 events a year

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Examples of Development Models in Local Cities

- Domestic case
 - Shintomi-cho, Koyu-gun, Miyazaki
 - Hamamatsu-city, Shizuoka
- Overseas case
 - Colorado (US)
 - Cairns (Australia)

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Cairns has more startups per capita than other regions. The startup sector is dominated by local industries such as tourism

Overview of Cairns

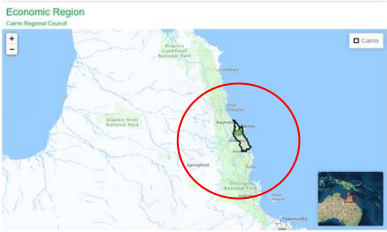
General Information

- Cairns is a tourist town located in the northernmost part of Queensland at 16 degrees South latitude and 145 degrees East longitude
- It is the gateway to the Great Barrier Reef, the world's largest coral reef and a UNESCO World Heritage Site. In addition, access to the rainforest, which is also designated as a World Heritage site, has been developed
- The climate belongs to the tropical zone and able to spend the whole year in summer clothes during the day
- With a population of 168,449 (as of June 30, 2020), it is the largest city in Far North Queensland
- The area is 1,687 km²
- Major industries include tourism, healthcare, construction, and retail

Startup Status

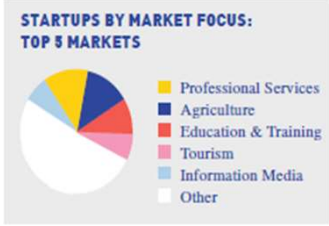
- According to the STARTUP ECOSYSTEM REPORT (January 2016) issued by the Queensland Government and other organizations, the Cairns startup ecosystem has the following characteristics
 - More startups per capita than South East Queensland (including Brisbane, the state capital)
 - On the other hand, the amount of funds raised is smaller than in other regions
 - Since 2010, 31 Tech startups have been established
 - The startup sector in Cairns ranges from education to agriculture. There are also many startups in the construction and tourism sectors

[Breakdown of startups by sector]



Source: Cairns Regional Council HP (<https://economy.id.com.au/cairns/>)

STARTUPS BY MARKET FOCUS: TOP 5 MARKETS



Source: Regional Queensland 2015, STARTUP ECOSYSTEM REPORT

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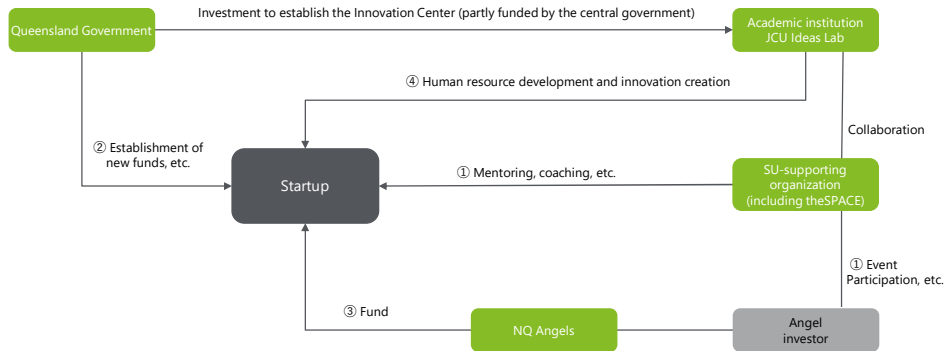
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In Cairns, the Queensland government has been leading the formation of a startup ecosystem since the late 2010s based on private initiatives such as theSPACE

Overview of the Cairns development model

Key Points

- ✓ Community: Since the 2010s, theSPACE and other SU-supporting organizations have built community (①)
- ✓ Funding: In July 2015, the state government created the Advance Queensland Initiatives to create a new fund for startups (②)
In 2018, NQ Angels launched a platform to connect local investors and entrepreneurs (③)
- ✓ Human Resources and Tech seeds: Innovation Center "JUC Ideas Lab" opened in James Cook University (JCU) in December 2020
It is expected to be a place for nurturing entrepreneurial talent and creating innovation (④)



Source: James Cook University HP (<https://www.jcu.edu.au/jcu-connect/innovate-with-us/cairns-innovation-ecosystem-contributors>)

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The State of Queensland has developed an innovation promotion policy ahead of the central government, with the aim of creating knowledge-based employment. theSPACE leverages that background to foster Cairns entrepreneurial culture

History of the formation of the startup ecosystem

Late 1990 – 2000s : Early days

- In 1998, the Queensland government announced "Smart State". Aiming for knowledge-based employment through the advancement of traditional industries using technology and the creation of new industries
- In 2005, ahead of the central government, the Smart State Strategy 2005 -2015 was formulated to promote innovation
 - Under the policy, the government will provide Cairns with funding to host incubators to support startups



Early 2010s : Entrepreneurship Culture Development Period

- In 2012, theSPACE, an innovation hub, was launched. It provides entrepreneurs with a core working space and work with successful startups to provide mentoring and coaching services
- 31 tech startups launched since 2010 (as of January 2016)



Late 2010s : Startup Ecosystem Formation

- In July 2015, the Queensland government formulated the Advance Queensland Initiatives to build an economy centered on innovation. In December of the same year, the Australian central government announced the National Innovation and Science Agenda to promote innovation and entrepreneurship
- Cairns has government-backed startup incubator and NQ Angels
- In 2016, then Prime Minister Malcolm Turnbull visited the SPACE. Announcing the construction of an innovation centre within James Cook University (JCU) to promote the creation of a startup ecosystem in Cairns and curb high youth unemployment. Opened as JCU Ideas Lab in December 2020

Source: Haines, T (2016) "Developing a Startup and Innovation Ecosystem in Regional Australia", Technology Innovation Management Review, 6 (6), pp. 24-32

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Human resources, tech seeds, funding and community stakeholders are connected organically. Particularly, theSPACE is recognized by stakeholders as a key player in the ecosystem

Major Stakeholders

Queensland Government

- was invited to join Business Development Queensland government formulated Smart State Strategy 2005 -2015 ahead of the central government
- In 2015, the "Advance Queensland Initiatives" were formulated. Invested 180 million USD to create innovation-centric economy
 - Startup support policy included the creation of new funds and support for the establishment of startup hubs. In response, Cairns had an iHub Ltd dedicated to the development of startup capabilities
 - In 2016, the SPACE founder Haines. Topment Investment Fund panel

theSPACE

- theSPACE is the innovation hub established by Haines. T and Zammit in 2014, they were selected by the Queensland government as Innovation Champions and helped to foster a culture of entrepreneurship in Cairns.
- theSPACE operates by collecting service fees from startups. Services include mentoring from successful startups and events to create connections with angel investors

Service characteristics of the SPACE

Successful startups not only benefit from mentoring and connections, but also have incentives to support new startups because they understand that the development of the ecosystem itself benefits their business. **->Promote the formation of communities**

JCU Ideas Lab

- The JCU Ideas Lab is an innovation hub located within the JCU. Aim to transform the innovation ecosystem of FNQ (Far North Queensland) through digital transformation
- It is also expected to create jobs and generate innovation to support economic growth in Cairns and surrounding areas
- The Central Government, Queensland Government and JCU will each bear 1/3 of the establishment costs
- On the website, JCU describes the state government, the SPACE, and NQ Angels as actors who build Cairns' innovation ecosystem together

NQ Angels*

*In 2020, due to business expansion, the name was changed from FNQ (Far North Queensland) Angels to NQ (North Queensland) Angels

- NQ Angels is a non-profit organization founded by professionals from the Cairns firm of Halpin Partners and MacDonnell Law (MacDonnell Law is one of the sponsors of the SPACE)
- Provides a platform to connect local investors with entrepreneurs who want to expand their business as products take shape
 - While theSPACE supports early stage entrepreneurs, NQ Angels is positioned as a second step for entrepreneurs

Source: Haines. T (2016) "Developing a Startup and Innovation Ecosystem in Regional Australia", Technology Innovation Management Review, 6 (6), pp. 24-32

Implications from Cases (Summary)

Although various models of local urban development have been observed through the examples, the importance of organizations and individuals that drive ecosystem development is common and supports the previous hypothesis

Suggestions from Cases (Summary)

Items	Implication	Cases
A catalyst for building an ecosystem	<ul style="list-style-type: none"> The most important thing is the organization or individual that can create one from scratch and lead the ecosystem even in the early days After a few success stories, followers will gather and a virtuous cycle develops They are attracted by a variety of factors, including attractive visions, local ties and a good living environment 	<ul style="list-style-type: none"> The enthusiasm of Mr. Okamoto, an employee of the Industrial Development Division, who had anxiety about the town's future, motivated Mr. Saito, whose mission is to solve regional problems through business. Both parties became the starting point for the formation of the ecosystem (Shintomi-cho, Miyazaki Prefecture) High quality of life attracts top entrepreneurs and is the starting point for an accelerator that drives ecosystem building (Colorado) People with awareness of the entrepreneurial environment in the activity area became key players in community formation (Cairns)
Industry	<ul style="list-style-type: none"> In many cases, not the entirely new industry, but they are growing in the surrounding area and adding value to existing products and services by using technology and idea based on the industrial assets in the region 	<ul style="list-style-type: none"> External SUs with advanced technology in the agricultural sector, which is the main industry of the region, flow into the region to look for business-related demonstration sites, etc. (Shintomi Town, Miyazaki Prefecture) With the support of local government, many external SUs with a strong affinity with local manufacturing companies have entered the market (Hamamatsu City, Shizuoka Prefecture) Based on the existence of national laboratories and the strength of the aerospace industry, many SUs in high-tech fields utilizing advanced technologies such as AI were born (Colorado) A number of tech-oriented SUs have emerged, particularly in key local industries such as tourism (Cairns)

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Various models of local city development have been seen through examples, but it is common that all of them are driving the creation of ecosystems and it supports the previous hypothesis

Suggestions from Cases (Summary)

Items	Implication	Cases
Role of government	<ul style="list-style-type: none"> The role of government depends on the maturity of the ecosystem. In particular, it plays an important role in presenting the direction of industrial development and providing risk money in the initial stage. In the more mature stage, the role shifts to complementing the elements that are lacking in the private sector 	<ul style="list-style-type: none"> A regional trading company (Koyu Foundation) was established in Shintomi-cho, Miyazaki Prefecture The mayor, who has experience as an entrepreneur, took the lead in implementing measures to attract external SUs and investors (Hamamatsu City, Shizuoka Prefecture) The Colorado government helped key industries access funding for SUs in the early stages The Queensland government adopted "the Smart State" at the initial stage and implemented an innovation promotion policy (Cairns)
Overcome local challenges	<ul style="list-style-type: none"> Communities that connect people, goods, money and information are particularly important in resource-scarce regions 	<ul style="list-style-type: none"> The Koyu Foundation, a regional trading company, formed a local community by connecting local farmers with external SUs (Shintomi-cho, Miyazaki Prefecture) Entrepreneurs from Hamamatsu City formed their own entrepreneurial community to support external SUs (Hamamatsu City, Shizuoka Prefecture) University of Colorado Boulder runs a community organization that connects enterprises, government and academia across the state (Colorado) The SPACE will become a hub connecting people, goods and money and foster a culture of entrepreneurship (Cairns)

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