

# Vulnerability Profile of Meghalaya : Block Level

## *Integrated Vulnerability Assessment*



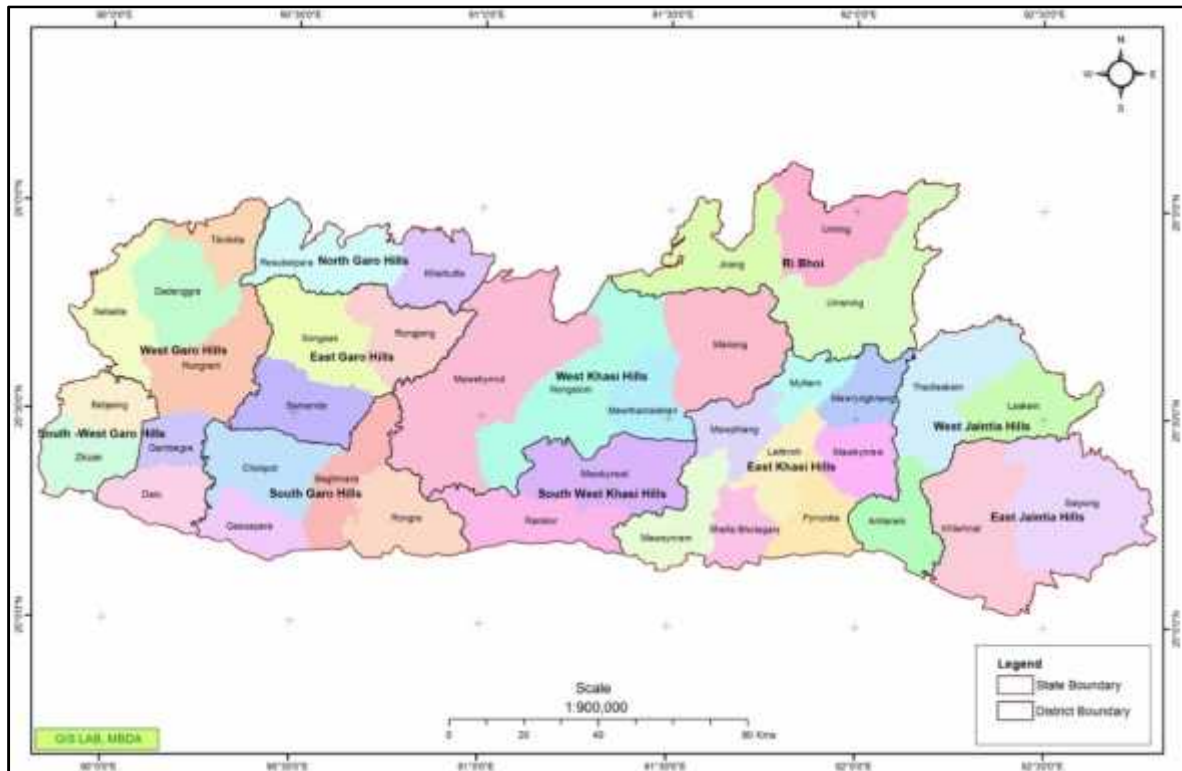
# **Vulnerability Profile of Meghalaya State: Block Level**

## *Integrated Vulnerability Assessment*

### **1. Characteristics of Meghalaya State**

Meghalaya is located between 24°57' to 26°10' N and 89°46' to 92°53' E and spreads over an area of about 22,429 km<sup>2</sup>. The temperature varies from 2°C to 35°C and receives the highest amount of rainfall in the country. The State houses Mawsynram and Cherrapunjee which are ranked as the wettest places in the world. The average rainfall at Cherrapunjee during the last 35 years has been 11,952 mm (470 inches) and there were several years when it was substantially more than this. The economy of Meghalaya is agrarian and the agriculture sector contributes 22% to the Gross State Domestic Product (GSDP) with 80% of the State's population depending directly and indirectly on agriculture, employment and income generation also depends on agricultural developmental activities to a great extent. Despite this, the Net Cropped Area is merely 9.76% of the total geographical area of the State. The State is extremely vulnerable to the impacts of changing climate and has faced the wrath of freak weather events in the recent past. The State is also prone to floods and soil erosion making the agriculture sector particularly vulnerable.

Urbanisation in Meghalaya is lower than the national average with an urban population of only 20.07% (Census Report, 2011). Majority of the State's population lives in rural areas. The State is divided into 11 districts with 46 Blocks.



**Figure 1:** Map of Meghalaya

a. Physical features and Land Use Pattern (100 words)

The State can be divided into three physiographic zones namely the Central Plateau Region (900-2000m elevations), the Sub-montane Plateau Region (<900m) which gradually merges with the plains in the West and North, and the Southern slopes which stretches sharply from the Central Plateau to the plains in Bangladesh.

The land use pattern of the State is broadly characterised as follows:

Sl. No.	Land Use Land Cover	Area (in km <sup>2</sup> )	% of Geographical area
1	Agricultural Land	2123.0	9.5
2	Settlements	811.4	3.6
3	Mining/Quarry	13.1	0.1
4	Lake/Ponds	12.5	0.1
5	River	201.0	0.9
6	Shifting Cultivation	424.0	1.9
7	Barren Rocky/Grassland	22.5	0.1
8	Gullied/Ravenous Land/Sandy Area	41.1	0.2
9	Scrub	1494.7	6.7
10	Forest	17285.6	77.1
	<b>Total</b>	<b>22429.0</b>	<b>100.0</b>

Source: GIS Lab, MBDA

### b. Biological features

Meghalaya is a part of Indo-Myanmar bio-geophysical region, which is one of the mega biodiversity regions of the world. Nokrek Biosphere Reserve, Balphakram National Park, Nongkhylllem, Siju, and Baghmara Wildlife Sanctuaries and a large number of sacred groves found in different parts of the State are the main preserves of biodiversity.

There are six major categories of vegetation in Meghalaya:

Sl. No.	Vegetation Type	Location
1.	Tropical Evergreen Forest	Spreads over the lower reaches of Khasi, Jaintia and Garo hills up to 1200 m and usually occurs in high rainfall areas as well as near catchment areas
2.	Tropical Semi Evergreen Forest	Occupies the north and north-eastern slopes of the State up to an elevation of 1200 m and with an annual rainfall of 1500-2000 mm
3.	Tropical Moist and Dry Deciduous Forest	Very prominent vegetation of Meghalaya covering a large part of East and West Garo Hills, Ri-Bhoi districts etc., in areas of annual rainfall less than 1500 mm and high temperature
4.	Grasslands and Savannahs	Secondary in nature and are prevalent in higher altitudes and are a result of removal of pristine forests
5.	Temperate Forests	Occupy the higher elevations (>1000 m) with very high rainfalls (2000-5000 mm) along the Southern slopes of Khasi and Jaintia Hills
6.	Subtropical Pine forests	Confined to the higher reaches (900-1500 m) of the Shillong plateau in Khasi and Jaintia Hills

The rich floral diversity of Meghalaya harbours about 18% of the total flora of the country. About 40% of the total flora of the State is endemic (Khan et al., 1997). More than 110 mammal species are reported from forests of Meghalaya.

### c. Socio-economic features

Meghalaya is inhabited by three major tribes namely, the Khasi, Jaintia and the Garo. As per Census Report, 2011, Meghalaya has a total population of 2,966,889. With a population growth of 27.95% in this decade, the State constitutes 0.25% of India's total population. Out of total population 595,450 (20.07%) people live in urban regions. The sex ratio in Meghalaya is fairly high with 1001 females per 1000 males in urban areas and in the rural regions female sex ratio per 1000 males was 986. The urban region has a higher average literacy rate of 90.79% as compared to the rural regions of 69.92%.

#### d. Climate

The State is influenced by the Southwest monsoon and the northeast winter wind characterising a temperate type of climate. Meghalaya has four distinct seasons; Spring (March and April), Summer (May to September) Autumn (October and November) and Winter (December to February). Monsoon starts by the first week of June to the end of September and sometimes well into the middle of October with spells of breaks. The average rainfall in the State varies from 4000 mm to 11,436 mm with maximum rainfall occurring over the southern slopes of the Khasi Hills. Temperatures in the State ranges between 2 C to 32C, depending on the location.

## 2. Indicators selected, rationale for selection and source of data

Table 1: List of indicators for Tier 1 vulnerability assessment relevant to districts, rationale for selection, functional relationship with vulnerability and sources of data

Indicators	Rationale for selection	Adaptive Capacity or Sensitivity	Functional relationship with Vulnerability	Source of data
Monthly income of highest earning household member is < 5000 (%)	The number of HHs categorized as- Inclusive HH, Deprived HH & Excluded HH shows the disparity in economic status contributing to their vulnerability	S	+	SECC,2011 obtained from C&RD Department
Livestock Ratio per 1000 Rural household	The livestock ratio indicates the diversity of economic activity reducing the vulnerability in case of incidences of crop failure	AC	-	Livestock Census, 2012
% of Rural HHs with No Land ownership (=HH owning no land/Total HHs X 100)	Landless population are in general considered vulnerable as land is considered a valuable asset.	S	+	SECC,2011 obtained from C&RD Department
% Total Female Workforce	The presence of female workforce contributes to additional income to the family and thereby reducing the vulnerability of the family.	AC	-	Census, 2011
Forests Area per '000 Rural Pop	Access to forests based resources by the population contributes to reducing the vulnerability of them	AC	-	GIS Lab, MBDA

Value of Output of Horticulture/ Value of Output of Agriculture	Agriculture sector has the highest contribution to the State Gross Domestic Product and employment for the State. A higher ratio of horticultural output value to agricultural output value indicates more resilient agricultural practice; and also ensures a better economic profile.	AC	-	State wise and item-wise estimates of value of output from agriculture and allied sectors (2011-12 to 2015-16) with base year 2011-12 2018 central statistics office ministry of statistics and programme implementation Government of India & Directorate of Agriculture, GoM
% Net Irrigated by Net Sown	Area under Irrigation will be able to grow additional crops especially in dry seasons whereby increasing farmers' income and hence reducing vulnerability.	AC	-	District Irrigation Plan, NABARD, 20165-2020 & Water Resource Department, GoM
Variability in Food grain Yield (RICE + Maize); 2009-10 to 2018-19	Food grain yield variability is based on the degree of variation in climatic conditions thereby determining the adaptive capacity.	AC	-	Directorate of Agriculture, GoM
Drainage Density (kms)	Rivers are susceptible to atmospheric condition which directly affects the population dependent on it and increasing their vulnerability.	S	-	GIS Lab, MBDA
Road Density per Sq kms	Road connectivity allows quick transportation of human and good especially in times of calamities which aids in reducing the vulnerability.	AC	-	GIS Lab, MBDA
Total Rural Banks/ 1000 Rural population	Banks provides a host of services to the rural population in helping them raise their economic condition and making them less vulnerable.	AC	-	SBI & Meghalaya Rural Bank. 2019-2020
Avg Person days/HH employed under NREGS over last 5 years	Population covered under the scheme over the years have access to an income to sustain their livelihood and reducing the vulnerability	AC	-	MGNREGA Website
NRM works per 1000 ha	It ensures sustainable	AC	-	MGNREGA Website

	management of natural resources through activities such as soil and water conservation, irrigation and ground water recharge facilities, and plantation; besides it aids in generating employment opportunities in rural areas.			
Households having kisan credit card with the credit limit of Rs.50,000 and above (%)	Average farm income per acre of cultivated land per HHs having KCC is much higher in comparison to non-KCC farmers. This ensures better accessibility to resources and a higher income generation which increases the adaptive capacity.	AC	-	<a href="https://secc.gov.in/statewiseTehsilLandOwnershipReport">https://secc.gov.in/statewiseTehsilLandOwnershipReport</a>
Anganwadi Centres per 1000 ha	The presence of AWCs will improve the health condition of women and children who are more susceptible, thereby reducing their vulnerability.	AC	-	Directorate of Health Services

#### a. Indicator and Normalised Indicator Values

This section presents the actual sub-indicator values used and their normalised scores for each of the indicators, for all the blocks in the State. Normalisation is done depending on the indicators' functional relationship with vulnerability (either positive or negative relationships) and corresponding formulae are used.

**Table 2:** Sub-indicator values and normalised scores for the indicator Demographic characteristics

*The table is given as Annexure-I.*

#### b. Weights Assigned

Ideally unequal weights are assigned to each of the indicators based on their significance over other selected parameters through expert consultation and discussions. However, while conducting this assessment study the same exercise couldn't be carried out due to temporary constraints imposed by the pandemic. Thus, unequal weights to each of the 14 indicators were assigned following the statistical method of Principal Component Analysis (PCA). The weights are determined by the factor loadings of the PCA; following table shows the derived weightage against each indicator which adds up to 100.

**Table 3:** Weights assigned to indicators and sub-indicators and the weights to be multiplied with normalized scores

Indicators	Weight	Weights
Monthly income of highest earning household member is < 5000 (%)	0.081	8
Livestock Ratio per 1000 Rural Household	0.075	8
% of Rural HHs with No Land ownership (= HH owning no land/Total HHs X 100)	0.058	6
% of Total Female Workforce	0.061	6
Forests Area per '000 population	0.075	8
Value of Output of Horti/Value of Output of Agri	0.068	7
% Net Irrigated by Net Sown	0.054	5
Variability in Food grain Yield	0.065	7
Drainage Density (kms)	0.053	5
Road Density	0.071	7
Total Rural Banks/ 1000 Rural population	0.070	7
Average Person days/HH employed under NREGS over last 5 years	0.074	7
NRM works per 1000 ha	0.058	6
Households having Kisan Credit Card with the credit limit of Rs.50,000 and above (%)	0.064	6
Anganwadi Centres per 1000 ha	0.074	7
<b>Total</b>	<b>1.000</b>	<b>100</b>

### 3. Vulnerability profile and ranking of Blocks

**Table 4:** Vulnerability Index Values and corresponding ranks of Blocks in the state

Blocks	Vulnerability Index	Vulnerability Ranking
Thadlaskein	0.651197714	1
Ranikor	0.648188933	2
Laskein	0.647985336	3
Mawkynrew	0.643724981	4
Mawthadraishan	0.626019766	5
Mairang	0.623697496	6
Saipung	0.622769059	7
Mawryngkneng	0.618895596	8
Amlarem	0.616067716	9
Shella Bholaganj	0.612949239	10



Ronggara	0.600684757	11
Gasuapara	0.600217018	12
Dalu	0.599635455	13
Khliehriat	0.597002368	14
Jirang	0.596046452	15
Rongram	0.59566658	16
Khatarshnong Laitkroh	0.59219248	17
Kharkutta	0.589920738	18
Mawphlang	0.588543733	19
Dadenggre	0.588470862	20
Pynursla	0.587509706	21
Umsning	0.579203253	22
Chokpot	0.578749777	23
Nongstoin	0.573680139	24
Gambegre	0.572843275	25
Mawsynram	0.563737324	26
Mawshynrut	0.562958509	27
Tikrikilla	0.553942191	28
Songsak	0.551422954	29
Mawkyrwat	0.544277081	30
Umling	0.54127574	31
Baghmara	0.540379733	32
Dambo Rongjeng	0.534740976	33
Resubelpara	0.531501817	34
Selsella	0.528564382	35
Samanda	0.519361154	36
Mylliem	0.448101285	37
Betasing	0.447008725	38
Zikzak	0.444356295	39

**Table 5:** Distribution of Blocks on a vulnerability Scale of Very Low to Very High Vulnerability

<b>Blocks</b>	<b>Vulnerability Index</b>	<b>Vulnerability Category</b>
Thadlaskein	0.651197714	
Ranikor	0.648188933	
Laskein	0.647985336	
Mawkynrew	0.643724981	
Mawthadraishan	0.626019766	
Mairang	0.623697496	
Saipung	0.622769059	
Mawryngkneng	0.618895596	
Amlarem	0.616067716	
Shella Bholaganj	0.612949239	

Ronggara	0.600684757	Very High
Gasuapara	0.600217018	
Dalu	0.599635455	
Khliehriat	0.597002368	
Jirang	0.596046452	
Rongram	0.59566658	
Khatarshnong Laitkroh	0.59219248	
Kharkutta	0.589920738	
Mawphlang	0.588543733	
Dadenggre	0.588470862	
Pynursla	0.587509706	
Umsning	0.579203253	
Chokpot	0.578749777	
Nongstoin	0.573680139	
Gambegre	0.572843275	
Mawsynram	0.563737324	
Mawshynrut	0.562958509	
Tikrikilla	0.553942191	
Songsak	0.551422954	
Mawkyrwat	0.544277081	
Umling	0.54127574	
Baghmara	0.540379733	
Dambo Rongjeng	0.534740976	
Resubelpara	0.531501817	Medium
Selsella	0.528564382	
Samanda	0.519361154	Low
Mylliem	0.448101285	
Betasing	0.447008725	
Zikzak	0.444356295	

Very Low	Low	Medium	High	Very High
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#### 4. Map of Blocks with Vulnerability Ranking

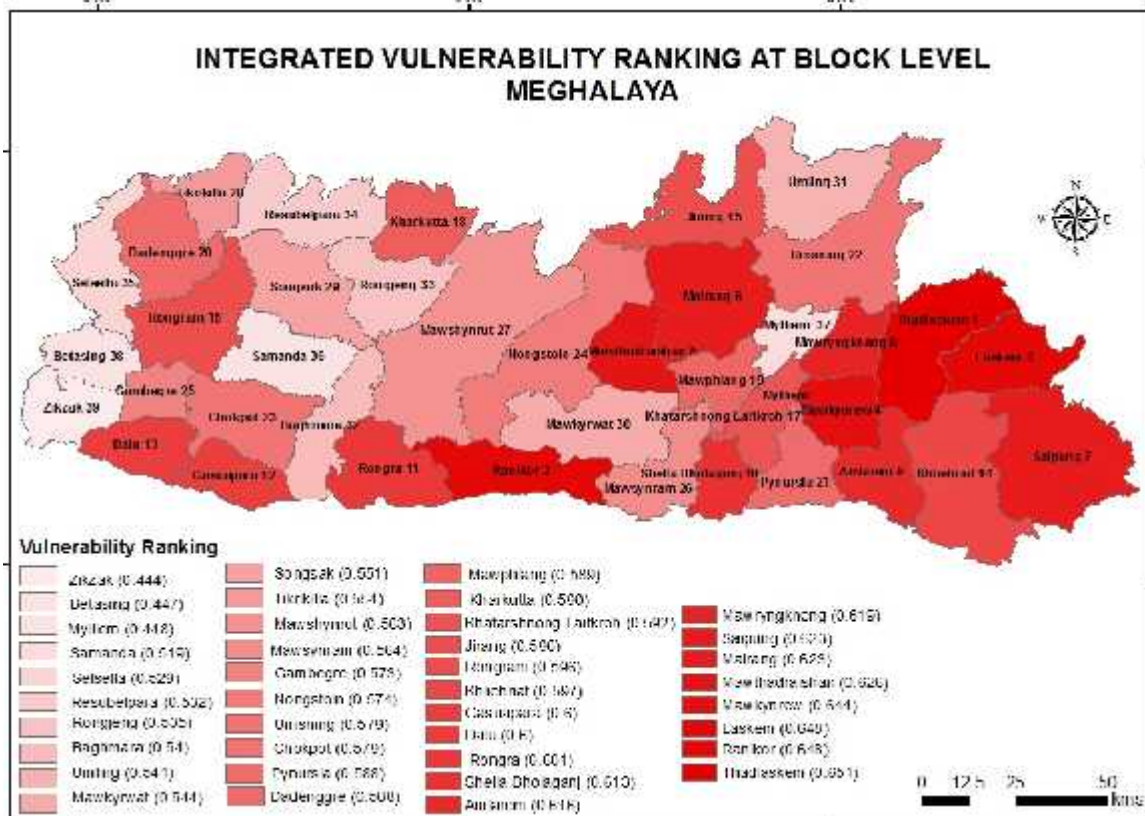


Figure 2: Map showing Blocks ranked based on the Integrated Vulnerability Assessment

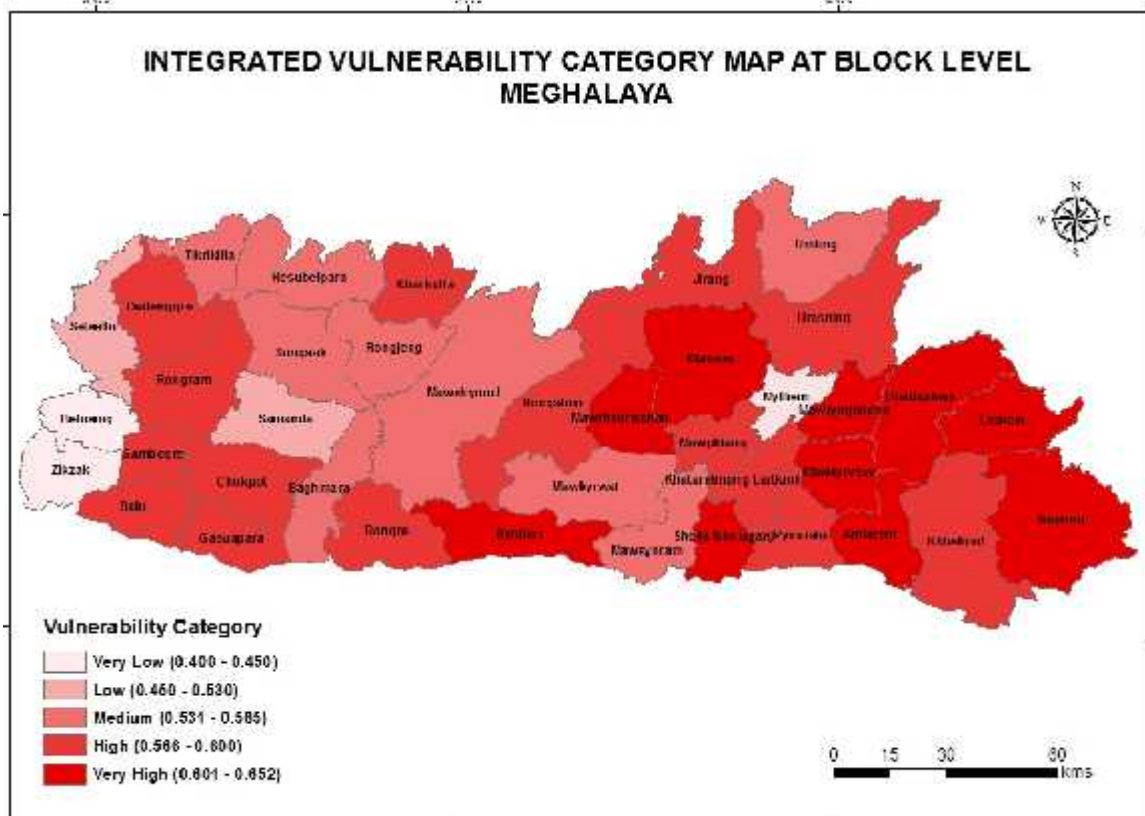


Figure 3: Map of Integrated Vulnerability Category of Meghalaya at Block level

## 5. Major Drivers of Vulnerability

The integrated vulnerability assessment show the State of Meghalaya is a vulnerable state with 25 out of 39 blocks falling under the High and Very High Vulnerability Categories. The vulnerability is majorly driven by 5 indicators viz.; 1. Anganwadi Centres per 1000 ha, 2. Households having kisan credit card with the credit limit of Rs.50,000 and above (%), 3. Monthly income of highest earning household member is < 5000 (%), 4. Forest Area per '000 Rural Pop, and 5. % Net Irrigated by Net Sown with high indices ranging between 8.28 to 9.57.

The strongest driver is the Number of Anganwadi Centres per 1000 ha where it is seen that 20 out of 39 blocks have less than 26 centres per 1000 ha of area which is the State's calculated average. The difference between Myllem block in East Khasi Hills and Saipung in East Jaintia Hills is 145 centres.

It was noted that in all the Blocks the percentage of HHs having kisan credit card with the credit limit of Rs.50,000 was less than 2% with the exception of Zikzak which, surprisingly, has 16% of its households with kisan credit card with the credit limit of Rs.50,000. Thus, showing the degree of vulnerability of the farming households in the State.

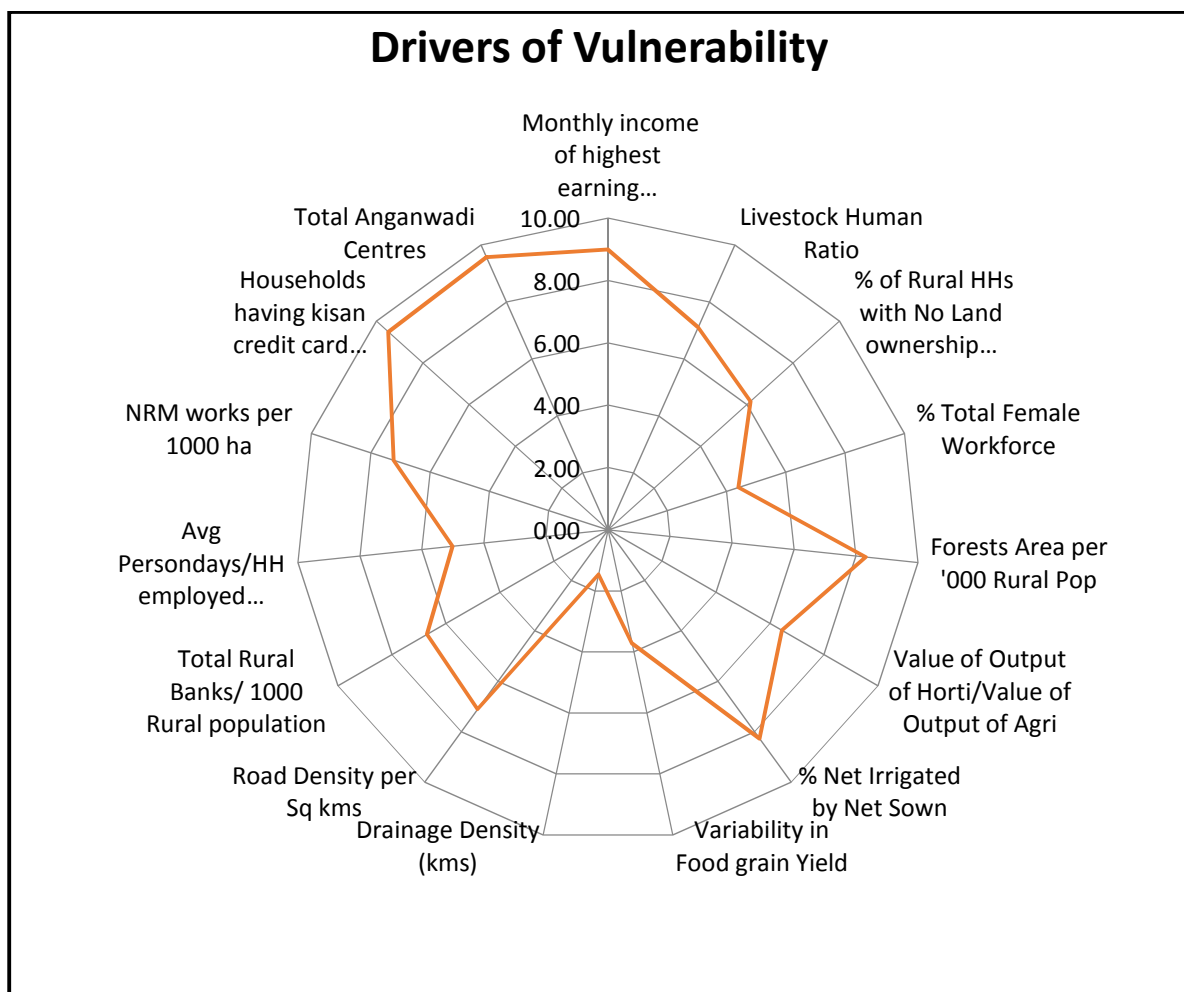
According the SECC, in 32 out of 39 blocks the percentage of HHs having Monthly income of highest earning household member is < 5000 is above 70% with the Block of Dadenggre having the highest percentage of above 92%. The vulnerability of the rural population is accentuated by the exceeding low income levels.

With less than 25% of the geographical area under Forests area, the availability of forests resources to the population is limited. The availability of Forests area per 1000 rural population ranges from 25.32 sq km in Saipung block of East Jaintia Hills to a mere 1.21 sq km in Myllem Block. 28 Blocks have less than 10 sq km of forests area per 1000 rural population.

The State has 14.45 % of Net Sown area under Net Irrigated area. Irrigation is almost nonexistent in some blocks with as low as 0.72 % net sown area under net irrigated area in Saipung Block, while the maximum stand at 67.61 % in Amlarem Block of West Jaintia Hills. 29 Blocks have less than 20% area under net irrigated.

This assessment can be summed up as; the block of Thadlaskein is the most vulnerable block of Meghalaya. The blocks of Ranikor, Laskein, Mawkynrew, Mawthadraishan, Mairang, Saipung, Mawryngkneng, Amlarem and Shella Bholaganj also falls in the very high vulnerability category. On the other hand, the Blocks of Zikzak, Betasing and Myllem fall under the Very Low Vulnerability Category.

For planning and policy making the indicators are broadly categorised under Socio-economic and livelihood, Bio Physical, Institution and infrastructure and Health. The assessment shows that 5 sub-indicators under Institution and infrastructure contribute 35.52% to the vulnerability of the State. While, 5 sub-indicators under Bio-Physical and 4 sub-indicators under Socio-economic and livelihood contribute 28.23% and 26.68% respectively. With only 1 sub indicator, Health alones contribute 9.57% to the States' vulnerability. A table and figure showing the contribution to vulnerability by each sub-indicator is provided as Annexure I and II respectively.



**Figure 4:** Drivers contributing to Integrated Vulnerability in Meghalaya at the block level

## **6. Challenges, limitations and way forward**

The first Integrated Vulnerability Assessment for the State of Meghalaya was conducted at the District level while the current assessment is conducted at the C&RD Block level. The advantage is that unlike the earlier report which only showed vulnerability for the 7 Districts the current will focus at a lower administrative level. Having said that, the current study is based on the 39 C&RD Blocks and not the present 45 C&RD Blocks. The newly constituted C&RD Blocks do not have the necessary data to carry forward with the assessment.

Since the assessment is solely based on secondary data, the lack of recent demographic and socio-economic data which accounts for five indicators poses a major limitation of the assessment.

In view of the current pandemic, expert consultation with the concern departments could not be held to discuss and assign suitable weights for each indicator.

As a way forward, the findings of the report will aid the policy makers in identifying 1. crucial sector to target as priority actions and 2. vulnerable blocks and its drivers. A similar assessment can be carried out with up-to-date spatial and temporal dataset. There is also a need for working closely with departments in identifying more state specific indicators and assigning weightage for a Meghalaya centric assessment.

**Table 2.0:** Sub-indicator values and normalised scores for the indicator demographic characteristics

Blocks	Monthly income of highest earning household member is < 5000 (%)	Livestock Human Ratio	% of Rural HHs with No Land ownership	% Total Female Workforce	Forests Are a per '000 Rural Pop	Value of Output of Horti/ Value of Output of Agri	% Net Irrigated by Net Sown	Variability in Food grain Yield	Drainage Density (kms )	Road Density per Sq kms	Total Rural Banks / 1000 Rural population	Avg Persondays/HH employed under NREGS over last 5 years	NR M works per 100 0 ha	House holds having kisan credit card with the credit limit of Rs.50, 000 and above (%)	Total Angan wadi Centres per 1000 ha
Mylliem	0.00	0.07	0.06	0.02	0.07	0.00	0.03	0.06	0.01	0.01	0.00	0.02	0.03	0.06	0.00
Mawphlang	0.07	0.05	0.04	0.06	0.07	0.00	0.05	0.02	0.01	0.03	0.04	0.05	0.06	0.06	0.04
Mawsynram	0.07	0.06	0.04	0.03	0.06	0.00	0.05	0.02	0.01	0.06	0.03	0.04	0.05	0.06	0.06
Shella Bholaganj	0.04	0.07	0.05	0.04	0.06	0.00	0.06	0.03	0.00	0.05	0.04	0.03	0.05	0.06	0.06
Pynursla	0.08	0.07	0.05	0.02	0.06	0.00	0.05	0.04	0.00	0.06	0.05	0.00	0.06	0.06	0.06
Khatarshnong Laitkroh	0.07	0.07	0.05	0.03	0.07	0.00	0.06	0.02	0.00	0.04	0.06	0.01	0.04	0.06	0.07
Mawkyntew	0.08	0.06	0.05	0.03	0.07	0.00	0.06	0.04	0.01	0.05	0.04	0.04	0.06	0.06	0.06

Mawryngkne ng	0.06	0.07	0.05	0.03	0.07	0.00	0.06	0.03	0.01	0.03	0.03	0.05	0.06	0.06	0.06
Mairang	0.06	0.06	0.04	0.05	0.05	0.05	0.04	0.01	0.01	0.04	0.04	0.06	0.06	0.06	0.07
Mawthadrais han	0.05	0.04	0.03	0.05	0.07	0.05	0.06	0.02	0.01	0.03	0.04	0.05	0.06	0.06	0.06
Nongstoin	0.06	0.03	0.03	0.03	0.04	0.05	0.06	0.01	0.01	0.06	0.04	0.04	0.06	0.06	0.07
Mawshynrut	0.05	0.05	0.05	0.01	0.03	0.05	0.04	0.02	0.01	0.06	0.04	0.03	0.06	0.06	0.07
Mawkyrwat	0.07	0.05	0.03	0.01	0.05	0.03	0.04	0.03	0.00	0.05	0.04	0.02	0.06	0.06	0.07
Ranikor	0.05	0.05	0.03	0.02	0.04	0.03	0.04	0.06	0.00	0.06	0.06	0.06	0.06	0.06	0.07
Umsning	0.05	0.07	0.04	0.03	0.06	0.05	0.03	0.00	0.01	0.04	0.04	0.06	0.06	0.06	0.06
Umling	0.05	0.07	0.02	0.01	0.05	0.05	0.05	0.03	0.01	0.05	0.00	0.04	0.06	0.06	0.07
Jirang	0.07	0.05	0.02	0.02	0.02	0.05	0.06	0.03	0.00	0.07	0.04	0.05	0.06	0.06	0.07
Thadlaskein	0.05	0.07	0.05	0.00	0.06	0.05	0.06	0.03	0.02	0.04	0.04	0.07	0.06	0.06	0.06
Laskein	0.03	0.07	0.06	0.01	0.07	0.05	0.05	0.01	0.02	0.06	0.05	0.05	0.06	0.06	0.06
Amlarem	0.04	0.06	0.05	0.04	0.06	0.05	0.00	0.03	0.02	0.06	0.03	0.04	0.06	0.06	0.07
Khliehriat	0.00	0.06	0.06	0.02	0.01	0.07	0.05	0.03	0.02	0.05	0.00	0.07	0.06	0.06	0.07
Saipung	0.02	0.00	0.05	0.02	0.00	0.07	0.07	0.02	0.01	0.07	0.06	0.06	0.06	0.06	0.07
Dambo Rongjeng	0.08	0.04	0.05	0.01	0.06	0.05	0.07	0.02	0.01	0.05	0.03	0.01	0.06	0.06	0.07



Songsak	0.07	0.04	0.04	0.03	0.05	0.05	0.07	0.02	0.01	0.04	0.05	0.00	0.04	0.06	0.07
Samanda	0.08	0.04	0.04	0.00	0.04	0.05	0.06	0.02	0.01	0.05	0.04	0.00	0.04	0.06	0.07
Rongram	0.07	0.04	0.05	0.05	0.06	0.06	0.07	0.02	0.01	0.04	0.05	0.03	0.05	0.06	0.06
Dadenggre	0.08	0.02	0.05	0.03	0.05	0.06	0.06	0.04	0.01	0.02	0.06	0.02	0.05	0.05	0.07
Selsella	0.06	0.04	0.04	0.06	0.07	0.06	0.05	0.00	0.00	0.00	0.05	0.04	0.04	0.06	0.05
Tikrikilla	0.06	0.03	0.00	0.03	0.07	0.06	0.06	0.04	0.00	0.03	0.06	0.01	0.04	0.06	0.05
Gambegre	0.07	0.01	0.00	0.02	0.06	0.06	0.07	0.02	0.05	0.05	0.04	0.00	0.05	0.06	0.06
Dalu	0.06	0.03	0.05	0.04	0.06	0.06	0.06	0.04	0.01	0.05	0.06	0.02	0.00	0.06	0.06
Resubelpara	0.07	0.04	0.03	0.03	0.06	0.06	0.06	0.01	0.00	0.04	0.05	0.01	0.05	0.06	0.06
Kharkutta	0.06	0.04	0.04	0.03	0.06	0.06	0.05	0.00	0.01	0.06	0.04	0.03	0.06	0.06	0.06
Betasing	0.07	0.01	0.02	0.03	0.07	0.06	0.04	0.01	0.00	0.01	0.04	0.03	0.02	0.06	0.04
Zikzak	0.06	0.01	0.02	0.01	0.07	0.06	0.06	0.01	0.00	0.04	0.05	0.04	0.03	0.00	0.05
Baghmara	0.04	0.04	0.04	0.02	0.04	0.04	0.06	0.02	0.01	0.05	0.04	0.00	0.04	0.06	0.07
Gasuapara	0.07	0.05	0.03	0.03	0.05	0.04	0.06	0.02	0.00	0.06	0.05	0.01	0.06	0.06	0.07
Ronggara	0.06	0.04	0.03	0.05	0.01	0.04	0.05	0.03	0.01	0.07	0.07	0.01	0.05	0.06	0.07
Chokpot	0.05	0.02	0.05	0.03	0.04	0.04	0.06	0.02	0.01	0.05	0.06	0.01	0.05	0.06	0.07

