**Preference be given to the specific subject area as stated below against the identified verticals**

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| **S. No** | **Relevent**  **Research**  **Vertical** | **Research**  **Thrust Area(s)** | **Objectives, Deliverables/**  **Expected Outcomes,**  **Expected enhanced TRL** |
| 1. | Management of Agro-bio resource | Documentation of wild edible flora of all states of North East India | Objectives:   1. To document and map (geo-tag) of wild edible flora of border areas of NE India 2. To screen their edibility and nutritional attributes. 3. To prepare field manual on wild edibles   Deliverables:   1. Field manual on wild edibles 2. Database of wild edibles 3. App based identification tool of wild edible flora |
| 2. | Environment & waste management | Water quality Mapping of North Eastern states (Assam, Arunachal Pradesh, Mizoram, Manipur, Meghalaya, & Tripura) | Objectives:   * Collection of water samples covering entire state along with coordinates. * Analysis of water samples for physico-chemical and microbial parameters.   Deliverables:   * Complete GIS based geo-tagged database for water quality showing present contaminants |
| 3. | Environment & waste management | Sustainable waste management technology development for high altitude low temperature difficultly accessible terrains. | Objectives:   * Development of consolidated, self-sustainable, system for human sewage management for different climates and conditions, especially for HA conditions * Comprehensive, self-sustainable, technology without power supply or water for mitigating composite wastes at HA region   Deliverables:  Technology and product development may be carried out as per the points mentioned below:   * Compact decentralized human sewage treatment system without power supply and water availability for HA low temperature areas (outside minimum temperature may drop around minus 30 degrees Celsius or less during winter) * Secondary effluent treatment system for different climates and conditions * Modular, self-sustainable easy to instal/ dismantlable system for human waste management for extremely difficult locations. Strong, lightweight highly foldable, carriable super structure and treatment system is envisaged. * Household/Community level decentralized human waste treatment system for base camps, settlements of HA areas |
| 4 | MEMS based sensors for specific applications | SiC MEMS | * Design and simulation of SiC MEMS pressure sensor. * Design of fabrication process methodology as per STARC capability |
| 5 | MEMS based sensors for specific applications | GaN MEMS | * Design and simulation of GaN MEMS accelerometer. * Design of fabrication process methodology as per GAETEC capability |
| 6 | MEMS based sensors for specific applications | MEMS high-field asymmetric waveform ion mobility spectrometry (FAIMS) for chemical vapour detection | * Design, simulation, fabrication and characterisation of prototype MEMS FAIMS device. * **Expected TRL is 3** |