

## Project Design Phase-I

### Problem Solution Fit

|              |  |
|--------------|--|
| Date         | 09 October 2022  |
| Team ID      | PNT2022TMID48246                                       |
| Project Name | IoT based smart crop protection system for agriculture |

|                         |  |   |  |                                   |
|-------------------------|--|---|--|-----------------------------------|
| Define CS, fit into CL  | <b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span> <ul style="list-style-type: none"> <li>Farmers, who's not near his field.</li> <li>Crop importers</li> </ul>   | <b>6. CUSTOMER LIMITATIONS</b> <small>EG. BUDGET, DEVICES</small> <span>CL</span> <ul style="list-style-type: none"> <li>High adoption costs, security concerns.</li> <li>Prevent the unnecessary use of this device.</li> <li>Use it according to the climate change</li> </ul>  | <b>5. AVAILABLE SOLUTIONS</b> <small>PLUSES &amp; MINUSES</small> <span>AS</span> <ul style="list-style-type: none"> <li>Monitor different parameters and mobile or web application make easily to farm the crop field.</li> <li>Certain cultural practices can prevent or reduce insect crop damage.</li> </ul> | Explore AS, differentiate         |
|                         | <b>2. PROBLEMS / PAINS</b> <small>+ ITS FREQUENCY</small> <span>PR</span> <ul style="list-style-type: none"> <li>It's difficult to monitor and control</li> <li>Ain't known if the application doesn't work properly.</li> </ul> | <b>9. PROBLEM ROOT / CAUSE</b> <span>RC</span> <p>What is the root of every problem from the list?<br/>eg. Poorly designed software and system might be caused by too much expensive (L1), and possible changes to the law might influence the return of investment (L2).</p> <ul style="list-style-type: none"> <li>If temperature, PH level, humidity &amp; light intensity makes the serious cause for the environment.</li> <li>Farmer affected by less productivity which will affect in their profit.</li> </ul>  | <b>7. BEHAVIOR</b> <small>+ ITS INTENSITY</small> <span>BE</span> <p><b>Direct related:</b> Tries to find a solution to prevent this problem</p> <p><b>Indirect related:</b> Located in rural where internet connectivity might not be strong enough to facilitate fast transmission speeds.</p>                 |                                   |
| Identify strong TR & EM | <b>3. TRIGGERS TO ACT</b> <span>TR</span> <p>Create opportunities to lift people out of poverty in developing nations. (Over 60%)</p>  | <b>10. YOUR SOLUTION</b> <span>SL</span> <p>If you are working on existing business, write down existing solution first, fill in the gaps and keep how much does it fit reality.<br/><b>"IoT based Smart crop protection system for agriculture"!!</b><br/>If you are working on a new proposition then keep it blank until you fill in the canvas and come up with a solution that fits within customer limitations, solves a problem and matches customer behaviour.</p> <p>It help farmers grow more food on less land by protection crops from pests, diseases and weeds as well as raising productivity per hectare.</p> | <b>8. CHANNELS of BEHAVIOR</b> <span>CH</span> <p><b>ONLINE</b></p> <p><b>ONLINE:</b> The Data send through application for the farmers to know about the farms.</p> <p><b>OFFLINE</b></p> <p><b>OFFLINE:</b> The control action is taken by the farmers to monitor the farms.</p>                               | Extract online & offline CH of BE |
|                         | <b>4. EMOTIONS</b> <small>BEFORE / AFTER</small> <span>EM</span> <p><b>BEFORE:</b> Finances, Heavy work overload and conflict in relationship.</p> <p><b>AFTER:</b> It will easier to make more yield in</p>                     |   |  |                                   |