

|                         |  |  |   |                                   |
|-------------------------|--|--|---|-----------------------------------|
| Define CS, fit into CL  | <b>1. CUSTOMER SEGMENT(S)</b> <span>CS</span><br>Farmer's who not near to his fields and cultivators   | <b>6. CUSTOMER LIMITATIONS</b> <small>EG. BUDGET, DEVICES</small> <span>CL</span><br>1) High adoption costs, more power and security concerns.<br>2) Not aware of the implementation of IoT in agriculture.  | <b>5. AVAILABLE SOLUTIONS</b> <small>PLUSES &amp; MINUSES</small> <span>AS</span><br>Monitor different parameters by mobile or web application which helps to earn the crop yield and the installation of electric fences, scarecrows were the methods already used by farmers.   | Explore AS, differentiate         |
|                         | <b>2. PROBLEMS / PAINS</b> <small>+ ITS FREQUENCY</small> <span>PR</span><br>1)The existing electric fence method for crop protection was not considered as the best solution because it needs regular maintenance.          | <b>9. PROBLEM ROOT / CAUSE</b> <span>RC</span><br>1)Temperature, PH level ,humidity & light intensity makes the serious cause for the environment.<br>2)Farmer affected by less productivity which will affect in their profit.<br>3)The animals in search of food, enter the field and damage all the crops before harvesting. It affects the yield terribly  | <b>7. BEHAVIOR</b> <small>+ ITS INTENSITY</small> <span>BE</span><br><b>Direct related:</b> Farmers made Electric fences and scarecrow to fear the animals.<br><b>Indirect related:</b> Located in rural where internet connectivity might not be strong enough to facilitate fast transmission speeds and involving human labours. |                                   |
| Identify strong TR & EM | <b>3. TRIGGERS TO ACT</b> <span>TR</span><br>1)Seeing other farmers installing Smart crop protection system.<br>2) Reading about the system in advertisements  | <b>10. YOUR SOLUTION</b> <span>SL</span><br><i>"IoT based Smart crop protection system for agriculture" !!</i><br>1)The device will detect the animals and birds and it generates an alarm and avoid animals from destroying the crop.<br>2)The device will also monitor the soil moisture levels, temperature, humidity values and also control the motors.<br>3)By this farmers will grow more food on less land which improves the productivity | <b>8. CHANNELS of BEHAVIOR</b> <span>CH</span><br><b>ONLINE:</b> The data send through application to the farmers to know about the farms.<br><b>OFFLINE:</b> The control action is taken by the farmers to monitor the farms.  | Extract online & offline CH of BE |
|                         | <b>4. EMOTIONS</b> <small>BEFORE / AFTER</small> <span>EM</span><br><b>BEFORE:</b> Finances, Heavy work overload and frustrated when their crops were destroyed.<br><b>AFTER:</b> It will easier to make more yield in field |  |   |                                   |