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## **Challenge Brief**

## Rescue Sector | Automated Borewell Rescue System

Team Name: **C2\_Team\_163**

Mentor Name: **SETHURAMAN R G**

Student Name: **JANAA S** & Roll No: **20BMC205**

Student Name: **SUDHARSAN M** & Roll No: **20BBT042**

Student Name: **SHYAM SUNDAR J** & Roll No: **20BAE040**

Student Name: **YOGESH T** & Roll No: **20BEC162**

Student Name: **SEDHURAM S** & Roll No: **20BAU031**

Student Name: **PRADEEPAN S** & Roll No: **20BME239**

# **#1 Describe the challenge as it is encountered by the different primary beneficiaries.**

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| **The main challenge encountered by the buyers and the beneficiaries are :-**   * The mortality rate of the child while pulling through ropes from the borewells is higher. * As the child is struck completely in the hole through the narrow borewell, the mechanism to pull the child from bottom is tedious and requires extra man power. * The borewells are so deep so that the hinge cannot function well in deep conditions. |

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# **#2 Describe the significance of solving this problem, and estimate/quantify the outcome/benefits for the beneficiaries listed.**

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| **The significance of solving this problem and the quality of the outcome are :-**   * By solving this problem many children lives can be saved when they fall accidentally. * The mortality rate of children falling into the borewell can be reduced. * This method also does not hurt while the child is being rescued. * There is no need to dig a big pit parallel to the borewell up to the depth where the child is struck. |

# **#3 What are the gaps with the current solutions or alternatives available?**

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| **The existing gap with the current solutions are :-**   * Even though there are so many methods existing, still there is a need of more simple and sophisticated rescue equipment. * Here we are proposing a system called **Arduino based child rescue system from bore well**. * In this system, there is no need to dig big pit parallel to the bore well up to the depth where the child is stuck. * Hence may not depend on the huge number of human resources (military, Para medical, etc.), and machinery (JCBs, Tractors, etc.). * Therefore, the delay involved in this accumulation of resources may be reduced and the chances of saving child alive are increased. |

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# **#4 What are the usability/deployment constraints to be considered for effectively solving the problem**

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| **The usability/deployment constraints to be considered for effectively solving the problem are**   * The product training for this new method is harder than that of existing methods. * The maintenance cost is higher as it has more movable parts. |
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# **#5 Identify/define the profiles of the prospective target buyer (or early adopters).**

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| * Government * Fire department |

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# **#6 References**

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| * <http://www.ndrf.gov.in/sites/default/files/SOP%20BOREWELL.pdf> * <https://theprint.in/theprint-essential/why-borewell-deaths-are-so-frequent-and-rescue-measures-fall-short-most-of-the-time/313215/> * https://www.irjet.net/archives/V7/i9/IRJET-V7I9475.pdf |