



उन्नत भारत अभियान
ग्रामीण विकास एवं प्रौद्योगिकी केंद्र
भारतीय प्रौद्योगिकी संस्थान, दिल्ली
हौजखास, नयी दिल्ली- 110016



UNNAT BHARAT ABHIYAN
INDIAN INSTITUTE OF TECHNOLOGY, DELHI
National Coordinating Institution

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Email: unnatbharatabhiyaniitd@gmail.com

Date: January 30, 2023

To

Dr. S.N. Topannavar

Hirasugar Institute of Technology, Belagavi, Karnataka

Subject: Financial Sanction of Technical Intervention project (No. RP-03525G) under UBA 2.0

Dear Sir

1. This is to intimate you that Technology Intervention proposals under the category of “**Technology Development**”: Project-No: **RP-03525G** entitled, “**Advanced Community Solar Dryer for Agro Products**” submitted by you under the *Unnat Bharat Abhiyan 2.0 Program*, has been approved by **Sustainable Agriculture System SEG** and funded by the **National Coordinating Institute UBA 2.0 (IIT Delhi)** against **UTR No. – 269545171** vide dated **30-12-2022**.
2. You can use the grant for fulfilling the project objectives under the approved heads as per the proposal, using the established procedure of your institute and as per the UBA guidelines, within 6 months from the date of receiving of funds. Kindly note that the utilization of funds allowed under the head “General Contingency” should not be more than 10% of the total sanctioned fund.

Note: TA/ Honorarium is strictly not permitted in this project.

3. Any product/service developed under the sanctioned project must have UBA logo on it.
4. Detailed information of faculty in-charge and students/volunteers, who will be coordinating/ working under the sanctioned project, shall be shared in the project report submitted by your institution.
5. The project implementation location/site shall be selected in consideration with gram panchayat officials/ members.

6. Please take care that the position holders/Panchayat officials shall not be benefitted in person. Also, ensure that the project shall not be controversial in terms of beneficiaries. Selection of beneficiaries shall include the Marginalized communities or EWS Category as well.
7. Few videos and images shall be shared to the SEG Coordinator (for updating the status of the project), also the report shall contain good quality pictures of the project site/product/service and feedback from the villagers/beneficiaries.
8. For the projects related to training camps, awareness, rally etc., the in-charge shall share the material/posters/modules to be used in the villages, for the knowledge of SEG Coordinator and further comments, if any.

You are required to submit the completion report/5-6 photographs/3 min videos of the project within two months after the completion of the project to the competent authority of NCI-IIT Delhi, UBA2.0 cell. Without the submission of the completion report, the opportunity for funding of a new project will not be facilitated.



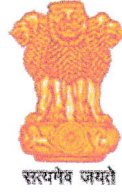
Prof. Vivek Kumar

National SEG Coordinator

Unnat Bharat Abhiyan (UBA 2.0)

National Coordinating Institute

Indian Institute of Technology, Delhi



Unnat Bharat Abhiyan-2.0 Program
A Flagship Program of Ministry of Education, Government of India

Funded by
National Coordinating Institute
Indian Institute of Technology, Delhi

A Project Report of
**Advanced Community Solar Dryer for
Agro Products**

Category: Technology Development
Project No.: RP-03525G

Submitted by:

Dr.S.N.Topannavar

Principal Investigator: SEG Project & UBA Program Coordinator
Dean (Academics) and Professor & Head
Mechanical Engineering Department

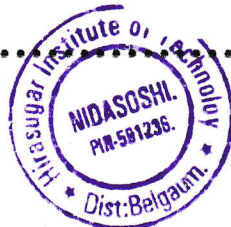


S.J.P.N Trust's
Hirasugar Institute of Technology,
Nidasoshi-591 236, KARNATAKA

Approved by AICTE, New Delhi, Permanently Affiliated to VTU, Belagavi
Recognized under 2(f) & 12B of UGC Act, 1956

Accredited at 'A' Grade by NAAC

Programmes Accredited by NBA:CSE,ECE,EEE & ME





ACKNOWLEDGEMENT

The satisfaction that accompanies the successful completion of any task would be incomplete without mention of the people who made it possible, whose constant guidance and encouragements crowned my efforts with success. We take this opportunity to express my deepest gratitude and appreciation to all those who helped us directly or indirectly towards the successful completion of this project.

Our special thanks to Unnat Bharat Abhiyana Program, Ministry of Education, Govt. of India for giving an opportunity serve the society through SEG-Technology Development Project. We are grateful to the National Coordinating Institute, UBA-2.0 SEG of Indian Institute of Technology, Delhi for giving us to serve the adopted villages by selecting and funding the project.

We consider this as a privilege to express my heartfelt gratitude and respect to all people and functionaries of 5 adopted villages (Nidasoshi, Ammanagi, Kesti, Borgal and Hattarwat) specially Chairman, PDOs, Members, all farmers for their cooperation to conduct surveys and to implement the UBA project.

My special thanks to our principal Dr.S.C.Kamate, staff and student volunteers and project associates of Hirasugar Institute of Technology Nidasoshi for providing facilities and their valuable participation to complete this project successfully.

Dr. S. N. Topannavar
18/12/2015

Dr.S.N.Topannavar

Principal Investigator: SEG Project &
UBA Program Coordinator





उन्नत भारत अभियान
UNNAT BHARAT ABHIYAN

Unnat Bharat Abhiyan-2.0, Ministry of Education, Govt. of India

and

S J P N Trust's Hirasugar Institute of Technology, Nidasoshi

Approved by AICTE, New Delhi, Permanently Affiliated to VTU, Belagavi

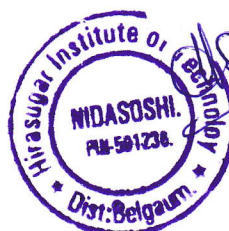
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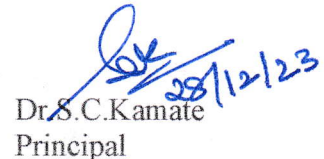


Executive Summary of Implementation of Unnat Bharat Abhiyan Programs- 1.0 & 2.0

1. In July 2020 institute is decided to participate in the UBA-1.0 and adopted 5 nearby villages
i) Nidasoshi ii) Ammanagi iii) Kesti iv) Borgal v) Hattarwat
2. In September, 2020, the Household and Village surveys are conducted in 5 adopted villages as per UBA prescribed format
3. The meeting of adopted villages Gram Panchayath Chairmans and PDOs are conducted and briefed them about the implementation and benefits of the UBA-1.0 .
4. 300+ students and 78+ staff are participated in surveys and survey's data are compiled and prepared report by the village conveyor. The reports and recommendations received from the Gram Panchayaths are discussed in the meetings of institute SEG and are analysed.
5. Total 5 Meetings were conducted with Institute UBA-SEG members and Adopted 5 villages' Gram Panchayat Chairmans, Members, PDOs and other functionaries and Participated in Gram Sabhas to recieve problems of villages
6. Under UBA-2.0, total 8 SEG Technology Development Projects proposals were prepared by 48 students and 17 faculty members and are submitted for financial support to UBA, out of 8, one SEG project has been received Rs. 1 Lakh fund from UBA-2.0 SEG IIT Delhi
7. The selected SEG Project on "Community Solar Dryer for Agro Products" has been completed and pilot model has been tested with sample farmers of adopted villages. The farmers suggestions are incorporated in the development of the project. Again tested with various available agro products. Lab testing completed and partially tested with agro products of selected farmers of adopted villages and received appreciations from farmers and Gram Panchayats.
8. The project has been completed successfully


18/12/23

Dr.S.N.Topannavar
Principal Investigator: SEG Project &
UBA-1.0 & 2.0 Program Coordinator


28/12/23

Dr.S.C.Kamate
Principal
PRINCIPAL
Hirasugar Institute of Technology
Nidasoshi-591 236





CONCLUSIONS AND OUTCOMES

The solar dryer can raise the ambient air temperature to a considerable high value for increasing drying rate of agricultural crops.

- The product inside the dryer requires less attentions, like attack of the product by rain or pest (both human and animals), compared with those in the open sun drying it can be used to dry other crops like yams, cassava, maize, potato and plantain etc.
- There is easy in monitoring when compared to the natural sun drying technique.
- The capital cost involved in the construction of a solar dryer much lower to that of a mechanical dryer.
- The dryer exhibited sufficient ability to dry food items reasonably rapidly to a safe moisture level and simultaneously it ensures superior quality of the dried product cabinet and air- heater are much higher than the ambient temperature.
- The solar dryer can raise the ambient air temperature to a considerable high value for increasing c drying rate of agricultural crops. The product inside the dryer requires less attentions, like attack of the product by rain or pest (both human and animals), compared with those in the open sun drying.


Outcomes of the Project:

The outcomes of our project are as below:

- Arduinio Controlled agro-product based drying.
- Affordable Cost agro-product Solar based Dryer.
- Increased farmer income by quality product.
- Automated & Product based controlled Drying.
- Quality ensured Products Portable & Movable Farmer Friendly Dryer.


18/12/23

Dr.S.N.Topannavar
Principal Investigator: SEG Project &
UBA-1.0 & 2.0 Program Coordinator


28/12/23
Dr.S.C.Kamate
Principal

PRINCIPAL
Hirasugar Institute of Technology
Nidasoshi-591 236



GFR 12 – A
[(See Rule 238 (1)]**FORM OF UTILIZATION CERTIFICATE
FOR AUTONOMOUS BODIES OF THE GRANTEE ORGANIZATION**UTILIZATION CERTIFICATE FOR THE YEAR 2023-24 in respect of non-recurring
GRANTS-IN-AID/SALARIES/CREATION OF CAPITAL ASSETS

- Name of the Scheme: Unnat Bharat Abhiyan-2.0, Program category: "Technology Development": Project-No: RP-03525G entitled, "Advanced Community Solar Dryer for Agro Products" sanctioned under the Unnat Bharat Abhiyan 2.0, approved by Sustainable Agriculture System SEG and funded by the National Coordinating Institute UBA 2.0 (IIT Delhi)
- Whether recurring or non-recurring grants: Non-recurring
- Grants position at the beginning of the Financial year
 - Cash in Hand/Bank : NIL
 - Unadjusted advances : NIL
 - Total : NIL
- Details of grants received, expenditure incurred and closing balances: (Actuals)

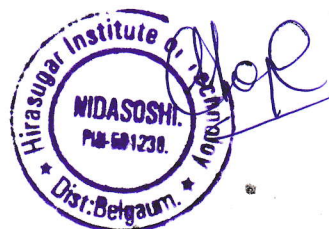
Unspent Balances of Grants received years [figure as at Sl. No. 3 (iii)]	Interest Earned thereon	Interest deposited back to the Government	Grant received during the year			Total Available funds (1+2-3+4)	Expenditure incurred	Closing Balances (5-6)
			Sanction No. (i)	Date (ii)	Amount (iii)			
1	2	3	4			5	6	7
			Sanction No. (i)	Date (ii)	Amount (iii)			
NIL	NIL	NIL	Project-No: RP-03525G UTR No. : 269545171	30.12.2022	Rs.1,00,000/-	Rs.1,00,000/-	Rs.1,00,000/-	NIL

Component wise utilization of grants:

Grant-in-aid- General	Grant-in-aid- Salary	Grant-in-aid-creation of capital assets	Total
Rs.1,00,000/-	NIL	NIL	Rs.1,00,000/-

Details of grants position at the end of the year


- Cash in Hand/Bank: NIL
- Unadjusted Advances: NIL
- Total: NIL







Certified that I have satisfied myself that the conditions on which grants were sanctioned have been duly fulfilled/are being fulfilled and that I have exercised following checks to see that the money has been actually utilized for the purpose for which it was sanctioned:

- (i) The main accounts and other subsidiary accounts and registers (including assets registers) are maintained as prescribed in the relevant Act/Rules/Standing instructions (mention the Act/Rules) and have been duly audited by designated auditors. The figures depicted above tally with the audited figures mentioned in financial statements/accounts.
- (ii) There exist internal controls for safeguarding public funds/assets, watching outcomes and achievements of physical targets against the financial inputs, ensuring quality in asset creation etc. & the periodic evaluation of internal controls is exercised to ensure their effectiveness.
- (iii) To the best of our knowledge and belief, no transactions have been entered that are in violation of relevant Act/Rules/standing instructions and scheme guidelines.
- (iv) The responsibilities among the key functionaries for execution of the scheme have been assigned in clear terms and are not general in nature.
- (v) The benefits were extended to the intended beneficiaries and only such areas/districts were covered where the scheme was intended to operate.
- (vi) The expenditure on various components of the scheme was in the proportions authorized as per the scheme guidelines and terms and conditions of the grants-in-aid.
- (vii) It has been ensured that the physical and financial performance under Unnat Bharat Abhiyan-2.0, Program category: "Technology Development": Project-No: RP-03525G entitled, "Advanced Community Solar Dryer for Agro Products" sanctioned under the Unnat Bharat Abhiyan 2.0, approved by Sustainable Agriculture System SEG and funded by the National Coordinating Institute UBA 2.0 (IIT Delhi) has been according to the requirements, as prescribed in the guidelines issued by Govt. of India.


27/12/2023
Shri. S.S. Dhange
Account Officer

Accountant
Hirasugar Institute of Technology
NIDASOSHI-591 236


27/12/23
Dr. S.N. Topannavar
Programme Coordinator
SEG-Unnat Bharat Abhiyan-2.0


28/12/23
Dr. S.C. Kamate
Principal

PRINCIPAL
Hirasugar Institute of Technology
Nidasoshi-591 236



Applied for :	Technology Development
Name of the College/ Institution :	Hirasugar Institute of Technology, Nidasohsi
UBA Coordinator Name :	Dr.S.N.Topannavar
UBA Coordinator mail id :	sntopannavar.mech@hsit.ac.in
UBA Coordinator Contact No :	9482440235
State :	Taluka: Hukkeri Dist: Belagavi Karnataka PIN:591236

PROJECT TITLE: ADVANCED COMMUNITY SOLAR DRYER FOR AGRO PRODUCTS

Objectives:

- To eliminate the unwanted and unpredictable food spoilage of the agri products.
- To study the characteristics and performance of the solar dryer system with continuous feeding & outlet mechanism.
- To develop a solar dryer system for quality ensured products.
- To Design & Develop low cost & Product based Automated (Arduio Controlled) Solar Cabinet Dryer for the welfare of Farmers & Food Processing Industries.
- To achieve favourable temperature for various agro-products with different wetness with the help of effective Solar Tracking system.

Justification for the project:

i) Problem Statement:

To study and develop a solar dryer in which the grains are dried continuously by circulating heated air from the solar air heater with the help of manual solar tracking system. The problem of low, medium & large scale processor could be alleviated, if the solar dryer is designed and constructed with the consideration of overcoming the limitation of direct & indirect type of solar dryer. So therefore, this work will be based on importance of a solar dryer which is reliable and economically viable, adoptive design. The controlled drying of the various agro products with the help of the Arduio controlled parameters. The project will help the farmers to enhance their economy and drying problems of various agro products.

ii) Priority Needs:

1. The prime priority to the farmer for drying of grains, as they will receive benefit of this.
2. The Second Priority To Food Processing Industries To Increases The Food Quality.

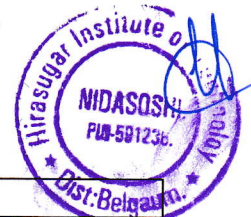
iii) Proposed approach/Technical Intervention/customization:

- Visited to farm and had conversation with farmers about what problems they are facing.
- And we pointed to main problem which they were facing that was drying of grains.
- We can to know about how farmers dry they grains. They use to dry the grains on road side.
- And then we listed the problems which they were facing Problems like: unpredictable food spoilage, more time consumption & unwanted thing mixing with grains.

iv) Brief plan of activities and implementation timeline:

Project starts from March, 2022 : .

Month	Weeks	Tasks Completed
March	2 weeks	To figure out the problem of drying of grains
March	2 weeks	Materials Selection & modelling
April	3weeks	Design Thinking
April-May	4 weeks	Fabrication Work
May-June	5 weeks	Experimentation with Raw materials & Agro-Products



June-July	4 weeks	Analysis, Results & Discussion
August	2 weeks	Conclusion

Methodology, Materials and Financial Resources:

Methodology:

The stepwise methodology to complete our Project is as below.

- Step 01: Literature Survey
- Step 02: Defining problem statement of the Project (Title)
- Step 03: With the help scope defining objective
- Step 04: Materials selection and Modelling
- Step 05: Design Thinking
- Step 06: Fabrication work
- Step 07: Experimentation with raw material & Agro-Products
- Step 08: Result & Discussion
- Step 09: Analysis & Recommendation
- Step 10: Conclusion

Materials:

Fiber Glass Body, Solar Panel, Blower, Absorber Plate, Orifice meter, Glass Cover, Arduino UNO, Temperature Sensor(DHT11), Trays, Metal Beams For Body Fabrication & Fibre glass For Solar Air Heater.

Financial Resources:

Budget	Amount in Rs.
a) Materials, Design and Development of Fiber glass body, Solar Panel, Blower, Absorber Plate, Orifice meter, Glass cover, Arduino UNO, Temperature Sensor(DHT11), Trays, Metal Beams For Body Fabrication, Fiber glass For Solar Air Heater.	70000.00
b) Fabrication Labor Charge	8000.00
c) Travelling Expenses & Running cost	20000.00
d) Site preparation cost	10000.00
e) Miscellaneous	10000.00
Total cost of the Technology in Rs.	118000.00

Outcome of the Project:

The expected outcomes of our project are as below:

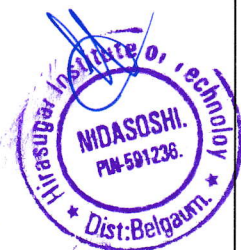
- Arduinio Controlled agro-product based drying.
- Affordable Cost agro-product Solar based Dryer.
- Increased farmer income by quality product.
- Automated & Product based controlled Drying.
- Quality ensured Products Portable & Movable Farmer Friendly Dryer.



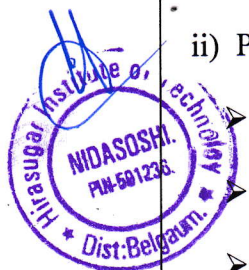
Proposal in Online Format

Applied for :	Technology Development
Name of the College/ Institution :	Hirasugar Institute of Technology, Nidasohsi
UBA Coordinator Name :	Dr.S.N.Topannavar
UBA Coordinator mail id :	sntopannavar.mech@hsit.ac.in
UBA Coordinator Contact No. :	9482440235
State :	Taluka: Hukkeri Dist: Belagavi Karnataka PIN:591236
SEG Name:	Expert Group (SEG) of IIT Delhi, Rural Energy Systems

RCI:	IIT Bombay	
AISHE Code of the College:	C-1409	
Adopted Villages are:	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat	
Title:	ADVANCED COMMUNITY SOLAR DRYER FOR AGRO PRODUCTS	
Village where it is to be implemented:	Nidasoshi	
Why this technology is required (Objective of the project maximum 200 word):	<ul style="list-style-type: none"> ➤ To eliminate the unwanted and unpredictable food spoilage of the agro products. ➤ To study the characteristics and performance of the solar dryer system with continuous feeding & outlet mechanism. ➤ To develop a solar dryer system for quality ensured products. ➤ To Design & Develop low cost & Product based Automated (Arduinio_Controlled) Solar Cabinet Dryer for the welfare of Farmers & Food Processing Industries. ➤ To achieve favorable temperature for various agro-products with different wetness with the help of effective Solar Tracking system. 	
Total Cost of the Product/Technology:	Budget	Amount
	a) Materials, Design and Development of Fiber glass body, Solar Panel, Blower, Absorber Plate, Orifice meter, Glass cover, Arduino UNO, Temperature Sensor(DHT11), Trays, Metal Beams For Body Fabrication, Fibre glass For Solar Air Heater.	70000.00
	b) Fabrication Labor Charge	8000.00
	c) Travelling Expenses & Running cost	20000.00
	d) Site preparation cost	10000.00
	e) Miscellaneous	10000.00
	Total Cost of the Technology	118000.00
Fund raised from:	NA	
Describe your role as PI at various stage of the project (max 500 words):	<p>The role of PI is to identify the needs of the village people by carrying out the survey in adopted villages. Based on the need analysis of village people, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After designing, testing of the proposed system is done.</p> <p>For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary.</p> <ol style="list-style-type: none"> 1. Design and Development Stage: Suitable Human resource mobilization and laboratory supports 2. Implementation Stage: Coordination between Gram Panchayat & SEG Members 3. Outcome Analysis Stage: Suitable human resource 	

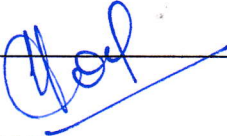


	mobilization
Process of execution of the project:	The stepwise methodology to complete our Project is as below. Step 01: Literature Survey Step 02: Defining problem statement of the Project(Title) Step 03: With the help scope defining objective Step 04: Materials selection and Modelling Step 05: Design Thinking Step 06: Fabrication work Step 07: Experimentation with raw material & Agro-Products Step 08: Result & Discussion Step 09: Analysis & Recommendation Step 10: Conclusion
Who are the beneficiaries (ST, SC, OBC, Tribal etc.) and potential impact of technology on the beneficiary and village :	Farmers having less farming land. The socio economic development of village farmers.
Duration of Project:	06 Months
Role of stake holders in maintaining sustainability after the project duration (please mention point wise role of participating stake holders):	<ol style="list-style-type: none"> 1) Solar system related maintenance work 2) Acquiring skills to operate automated system 3) Suggesting to institute level SEGs for further improvement in design and development 4) Addressing the grievances of the farmers and resolving 5) Scaling of the project
Execution of the project along with role of all participating stakeholders (write point wise max 500 words) :	<p>i) Problem Statement:</p> <p>To study and develop a solar dryer in which the grains are dried continuously by circulating heated air from the solar air heater with the help of manual solar tracking system. The problem of low, medium & large scale processor could be alleviated, if the solar dryer is designed and constructed with the consideration of overcoming the limitation of direct & indirect type of solar dryer. So therefore, this work will be based on importance of a solar dryer which is reliable and economically viable, adoptive design. The controlled drying of the various agro products with the help of the Arduinio controlled parameters. The project will help the farmers to enhance their economy and drying problems of various agro products.</p> <p>ii) Priority Needs:</p> <ol style="list-style-type: none"> 1. The prime priority to the farmer for drying of grains, as they will receive benefit of this. 2. The Second Priority To Food Processing Industries To Increases The Food Quality. <p>ii) Proposed approach/Technical Intervention/customization:</p> <ul style="list-style-type: none"> ➤ Visited to farm and had conversation with farmers about what problems they are facing. ➤ And we pointed to main problem which they were facing that was drying of grains. ➤ We can to know about how farmers dry they grains. They



	<p>use to dry the grains on road side.</p> <p>➤ And then we listed the problems which they were facing Problems like: unpredictable food spoilage, more time consumption & unwanted thing mixing with grains.</p>
Impact of this work on learning of students/ teachers:	Resolving the farmers' problems related to their agro products. Using of advanced technology to enhance the value of the agro products. Technology intervention in the agriculture.
Role of PI after completion of the project duration.	<ol style="list-style-type: none"> 1) Scaling of the project to reach all need people of the adopted villages 2) Preparing DPR to the district level 3) Automation for feeding and outlet mechanism to increase productivity 4) Steps to increase the performance and efficiency of the project 5) Design and development towards increasing the quality of the agro products for exporting. 6) Steps towards to add relevant values to the agro products.
Enter Name and Contact details of students involved in this project:	<p>1. AMIT.P.THORAT E-mail: amitandthorat19@gmail.com Mobile No.:7337722814</p> <p>2.SHWETA.M. KUMBAR Email id:shwetakumbar1999@gmail.com Mobile No.: 8296654234</p> <p>3. AJINKAYKUMAR.S.BHOSALE Email id: bhosaleajinkya41@gmail.com Mobile No.: 6360103570</p> <p>4. SHRIDHAR.B.MUDIGOUD Emailid:shridharmudigoud1198@gmail.com Mobile No.: 8105443562</p>
Enter Name and Contact details of peoples those will be involved in this project (From UBA connected / adopted village):	<ol style="list-style-type: none"> 1. Dr.M.M.Shivasimpi (Mobile no.:9742197173) 2. Prof,M,I,Tanodi (Mobile no.:9611998812) 3. Dr.K.M.Akkoli (Mobile no.:9739114856) 4. Prof.D.N.Inamdar (Mobile no.:9591208980)

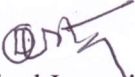

Dr. S.N.Topannavar
Principal Investigator


Dr.S.N.Topannavar
UBA Program Coordinator




Applied for :	Technology Development
Name of the College/ Institution :	Hirasugar Institute of Technology, Nidasohsi
UBA Coordinator Name :	Dr.S.N.Topannavar
UBA Coordinator mail id :	sntopannavar.mech@hsit.ac.in
UBA Coordinator Contact No :	9482440235
State :	Karnataka, Dist: Belagavi Block: Hukkeri
SEG Name:	Expert Group (SEG) of IIT Kharagpur & GSIT Indore
RCI:	IIT Bombay
AISHE Code of the College:	C-1409
Adopted Villages are:	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat
Title:	LAKE CLEANING MACHINE
Village where it is to be implemented:	Ammanagi
Why this technology is required (Objective of the project maximum 200 word):	In India water pollution is increasing day by day so this is becoming serious problem for rivers, ponds, lakes etc. These lakes or rivers etc mainly consist of impurities like waste water debris, plastics, garbage on floating water surface. Many species consume plastic debris as food by mistakenly while feeding or swimming. Once ingested, this debris can damage their digestive tract and interfere with an animal's ability to feed, leading to starvation or other negative health effects. Polluted water also causes many skin diseases to human kind. So that to reduce the water pollution we are trying to make lake cleaning machine. "Lake Cleaning Machine" a device which involves the collecting the waste debris from water surface through remote controller.
Total Cost of the Product/Technology:	Rs.1,00,000/-
Fund raised from:	Not Applicable
Describe your role as PI at various stage of the project (max 500 words):	The role of PI is to identify the needs of the village people by carrying out the survey in adopted villages. Based on the need analysis of village people, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After designing, testing of the proposed system is done. For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary.
Process of execution of the project:	A survey regarding the needs of the beneficiary villages is carried out with the help of the students. Collected survey information is analysed and a proposal is prepared based on the needs. A detailed schedule of implementation is prepared. The detailed proposal with all necessary information is submitted for approval.

	<p>If the submitted proposal is approved and sanctioned, then all the materials will be procured through a proper process of quotation, comparison and placing order.</p> <p>After receiving all the required materials necessary structure is built, all the required components are assembled and then tested for its proper operation.</p> <p>The beneficiaries will be given awareness about its operation and maintenance.</p> <p>Necessary technical support will be provided as per the need.</p>
Who are the beneficiaries (ST, SC, OBC, Tribal etc.) and potential impact of technology on the beneficiary and village :	Society
Duration of Project:	6 Months
Role of stake holders in maintaining sustainability after the project duration (please mention point wise role of participating stake holders):	<p>1) Routine maintenance of the system</p> <p>2) Safety checks on regular basis.</p>
Execution of the project along with role of all participating stakeholders (write point wise max 500 words) :	Survey, Need analysis, Material listing, Purchasing, Designing and Testing
Impact of this work on learning of students/ teachers:	Students/ teachers will be able to plan, schedule and implement the project in a team.
Role of PI after completion of the project duration.	<p>The role of PI is to identify the needs of the village people by carrying out survey in adopted villages. Based on the need analysis of village people, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After successful installation, testing of the proposed system is done.</p> <p>For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary.</p>
Enter Name and Contact details of students involved in this project:	<p>Mr.Kunal Mane, Mob: 9108753392,</p> <p>Mr.Vaibhav Mugale, Mob:7406041431</p> <p>Akhilesh Patil, Mob: 9449127367,</p> <p>Ashwat Karadigud, Mob: 7760406281,</p> <p>Akash Tukare, Mob: 8867737591</p>
Enter Name and Contact details of peoples those will be involved in this project (From UBA connected / adopted village):	<p>Prof. K. B. Negalur, Mobile:7619165884</p> <p>Prof. S. S Birade, Mobile: 9945105480</p> <p>Prof. S. G. Huddar, Mobile: 9742066852</p> <p>Mr. R. S. Bardol Mob: 8277010328,</p> <p>Mr. V. M. Mutalik, Mobile:7338327184</p> <p>Mr. S. B. Beelur, Mobile: 8105974422</p>


Principal Investigator
Prof. K. B. Negalur


HOD
Dr. B. V. Madiggond
BE,ME,Ph.D
Prof. & Head
Dept. of Electrical & Electronics Engg.
NIT NIDASOSHI-501 236


UBA Coordinator
Dr.S.N. Topannavar

UNNATA BHARAT ABHIYAN

Project Proposal

2021-2022

Applied For:	TECHNOLOGY CUSTOMIZATION
Name of college/institute:	Hirasugar Institute Of Technology, Nidasoshi
UBA co-ordinator name:	Dr. S. N. Topannavar
UBA co-ordinator email:	sntopannavar.mech@hsit.ac.in
UBA co-ordinator contact no.:	9482440235
State:	Karnataka
District:	Belagavi
Block:	Nidasoshi- 591236
SEG Name:	Rural Energy Systems(IIT-Delhi)
Select RCI:	IIT-Bombay
AISHE code of college:	C-1409
Title Of the Technology:	"SAURA CHULA, Solar Powered GSM Based Multipurpose Wireless Smart cooking/Water Heating Device"



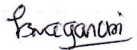

Village where it is to be adopted:	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat				
Why this technology required(Objective of the project):	Alternate source of energy is always a green approach of energy consumption, in the time of crises of energy and global warming. Use of solar energy for cooking as well as water heating is better solution, but still not established as user friendliness and economic aspect. Food is the basic need of human being. Food can be cooked with conventional fuels like wood, cow- dung, kerosene, Liquid Petroleum Gas (LPG) and electricity. Solar cooker is clean and eco-friendly energy device for cooking.				
Total cost of the product/technology:	Materials / Consumables	Labor	Travel	Miscellaneous	
	35,000	8000	3000	4000	
Funds raised from:	NA				
Details of the funds raised from any other agencies apart from above mentioned:	NA				
Describe your role as PI at various stages of project:	Take the survey at villages. Implementation and development of project according to the requirements. Take the feedback from the peoples.				


Process of execution of the project:	Continuous monitoring of project at Household. Providing support after installation.
Who are the beneficiaries(ST,S C, OBC)and potential impact of the technology on the beneficiary & village:	<p>01. Now a days the LPG cylinder rate is becoming too high, so that we want to reduce a minimum usage of LPG cylinder.</p> <p>02. Implementation of this project will reduces air pollution.</p> <p>03. Solar water heating systems are very high in cost, so that poor people's can't be use.</p> <p>04. Voluntary migration can also improve food security both for migrants and the families left behind, particularly in rural areas.</p>
Duration of the project:	8 Months
Role of stakeholders in maintaining sustainability after the project duration:	Department /Institute will provide support and monitor adopted villages on regular basis and solve the problems related to this project.
Execution of the project along with role of all participating stakeholders:	Department/Institute is providing necessary laboratory support.


Impact of this work on learning of students /teachers:	It will enhance the technical skill, which include Adriano concept. It is also enhance the soft skill.
Role of PI after completion of the project duration:	Continuous monitoring of project.
Enter name & contact details involved in this project:	<p>1. Name: TEJU NINGANURE USN No.: 2HN18EC032 Email id: tejuninganure73529@gmail.com Mobile No: 7406397758</p> <p>2. Name: SNEHAL KAGI USN No.: 2HN19EC400 Email id: snehalkagi8@gmail.com Mobile No.: 7019424868</p> <p>3. Name: SUDHA NAGANURI USN No.: 2HN19EC401 Email id:naganurisudha@gmail.com Mobile No.: 8884945697</p> <p>4. Name: TANUJA KHARSHINGE USN No.: 2HN19EC402 Email id: tanuja.kharshinge9@gmail.com Mobile No.: 7090101643</p>


Enter Name & contact details of peoples those will be involved in this project (From UBA connected / adopted):	Prof. Sachin. S. Patil Mobile: 9480422508 Sachinpatil.ece@gmail.com	Prof. D. B. Madihalli Mobile: 9902854324 dbmadhihalli@hsit.ac.in
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Name and sign of Team Members:

Name	Sign
Teju Ninganure	
Snehal Kagi	
Sudha Naganuri	
Tanuja Kharshinge	


Principal Investigator
Prof. Sachin S. Patil


HOD
Dr. S. B. Akkole
HOD
Electronics & Commn. Engg. Dept.
HSIT NIDASOSHI


UBA Coordinator
Dr. S. N. Topannavar


Prof. D. B. Madihalli

Applied for :	Technology Customisation
Name of the College/ Institution :	Hirasugar Institute of Technology, Nidasohsi
UBA Coordinator Name :	Dr.S.N.Topannavar
UBA Coordinator mail id :	sntopannavar.mech@hsit.ac.in
UBA Coordinator Contact No :	9482440235
State :	Karnataka, Dist: Belagavi Block: Hukkeri
SEG Name:	Expert Group (SEG) of IIT Delhi, Rural Energy Systems
RCI:	IIT Bombay
AISHE Code of the College:	C-1409
Adopted Villages are:	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat
Title:	Solar Multipurpose Portable Emergency Lamp
Village where it is to be implemented:	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat 2 units at every adopted village
Why this technology is required (Objective of the project maximum 200 word):	<p>Need for light during power cut is essential for leading life of any one. The life of the farmer is always engaged with cleaning of land, growing of crops, spraying of pesticide to protect the crop and harvesting. Recently, there are many developments in the pesticide sprayer which is automated and helping the farmer in spraying of pesticides. This sprayer works on electricity i.e. energy is stored in battery.</p> <p>The battery of pesticide sprayer is required to be charged from the supply mains. However, power cut is quite common in rural areas. To address this problem of power cut renewable energy source is used to charge the battery.</p>
Total Cost of the Product/Technology:	Rs.50000.00/-
Fund raised from:	Not applicable
Describe your role as PI at various stage of the project (max 500 words):	<p>The role of PI is to identify the needs of the beneficiary. Then site survey is carried out in adopted villages for the implementation of the project. Based on the need analysis of beneficiary, technically feasible and economically viable system design is proposed for technological development and implementation through procuring of materials and accessories. After successful installation, testing of the proposed system is done.</p> <p>For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary.</p>
Process of execution of the project:	<p>A survey regarding the needs of the beneficiary villages is carried out with the help of the students. Collected survey information is analysed and a proposal is prepared based on the needs.</p> <p>A detailed schedule of implementation is prepared. The detailed proposal with all necessary information is submitted for approval.</p> <p>If the submitted proposal is approved and sanctioned,</p>

	<p>then all the materials will be procured through a proper process of quotation, comparison and placing order.</p> <p>After receiving all the required materials necessary structure is built, all the required components are assembled and then tested for its proper operation.</p> <p>The beneficiaries will be given awareness about its operation and maintenance.</p> <p>Necessary technical support will be provided as per the need.</p>
Who are the beneficiaries (ST, SC, OBC, Tribal etc.) and potential impact of technology on the beneficiary and village :	OBC
Duration of Project:	8 Weeks
Role of stake holders in maintaining sustainability after the project duration (please mention point wise role of participating stake holders):	<ol style="list-style-type: none"> 1) Routine maintenance of the installed system 2) Cleaning of the solar panels 3) Safety checks on regular basis.
Execution of the project along with role of all participating stakeholders (write point wise max 500 words) :	Survey, need analysis, material listing, purchasing, installing, and testing
Impact of this work on learning of students/ teachers:	Students/ teachers will be able to plan, schedule and implement the project in a team.
Role of PI after completion of the project duration.	<p>The role of PI is to identify the needs of the beneficiaries and by carrying out survey in adopted villages. Based on the need analysis of beneficiaries, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After successful installation, testing of the proposed system is done.</p> <p>For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiaries.</p>
Enter Name and Contact details of students involved in this project:	<p>Mr.Kunal Mane Mob: 9108753392, Nagadarshan Koppard Mob: 7259290709, Akhilesh Patil Mob: 9449127367, Ashwat Karadigud Mob: 7760406281, Naveenkumar Gokanvi Mob:8095424048</p>
Enter Name and Contact details of peoples those will be involved in this project (From UBA connected / adopted village):	<p>Dr.B.V.Madiggond Mob: 9343454993, Prof.S.D.Hirekodi Mob: 9480849338, Prof.M.P.Yenagimath Mob:9341449466, Mr.R.S.Bardol Mob: 8277010328, Mr.S.B.Beelur Mob: 8105974422, Mr.B.S.Sooji Mob:9480849343, Mr.A.A.Patil Mob:9449498248, Mr.S.N.Biranagaddi Mob:7219803176</p>



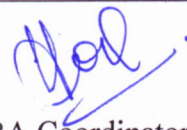
Principal Investigator
Dr. B.V.Madiggond



HOD

Dr. B. V. Madiggond

Prof. & Head BE,ME,Ph.D.
Dept. of Electrical & Electronics Engg.
HIT NIBASOSHI-501 236



UBA Coordinator
Dr.S.N. Topannavar

Applied for :	Technology Development
Name of the College/ Institution :	Hirasugar Institute of Technology, Nidasohsi
UBA Coordinator Name :	Dr.S.N.Topannavar
UBA Coordinator mail id :	sntopannavar.mech@hsit.ac.in
UBA Coordinator Contact No :	9482440235
State :	Karnataka, Dist: Belagavi Block: Hukkeri
SEG Name:	Expert Group (SEG) of IIT Delhi, Rural Energy Systems
RCI:	IIT Bombay
AISHE Code of the College:	C-1409
Adopted Villages are:	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat
Title:	Solar water pump for Irrigation
Village where it is to be implemented:	Nidasoshi
Why this technology is required (Objective of the project maximum 200 word):	Rural income largely depends on agriculture, especially farmers growing vegetables, flowers suffer due to power cuts. At present 3 phase power availability is only for few hours in rural areas usually, after midnight. This problem is addressed in our proposal, wherein the power supply is available during day time for irrigation purpose helping farmers to schedule their other activities such as sowing, spraying, harvesting etc. In the evening they are sorting and packing their crops. Early morning they are busy with marketing of vegetables/ flowers etc. Hence, it is feasible to irrigate during day by utilizing solar energy.
Total Cost of the Product/Technology:	Site Preparation: 5000/- Equipment/Machinery cost: 95,000/- Running cost/Manpower cost Electricity cost: -Nil-
Fund raised from:	Not Applicable
Describe your role as PI at various stage of the project (max 500 words):	The role of PI is to identify the needs of the farmer and by carrying out survey in adopted villages. Based on the need analysis of farmers, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After successful installation, testing of the proposed system is done. For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary.
Process of execution of the project:	A survey regarding the needs of the beneficiary villages is carried out with the help of the students. Collected survey information is analysed and a proposal is prepared based on the needs. A detailed schedule of implementation is prepared. The detailed proposal with all necessary information is submitted for approval. If the submitted proposal is approved and sanctioned, then all the materials will be procured through a proper process of quotation, comparison and placing order. After receiving all the required materials necessary structure is

	built, all the required components are assembled and then tested for its proper operation. The beneficiaries will be given awareness about its operation and maintenance. Necessary technical support will be provided as per the need.
Who are the beneficiaries (ST, SC, OBC, Tribal etc.) and potential impact of technology on the beneficiary and village :	OBC
Duration of Project:	8 Weeks
Role of stake holders in maintaining sustainability after the project duration (please mention point wise role of participating stake holders):	1) Routine maintenance of the installed system 2) Cleaning of the solar panels 3) Safety checks on regular basis.
Execution of the project along with role of all participating stakeholders (write point wise max 500 words) :	Survey, need analysis, material listing, purchasing, installing, and testing
Impact of this work on learning of students/ teachers:	Students/ teachers will be able to plan, schedule and implement the project in a team.
Role of PI after completion of the project duration.	The role of PI is to identify the needs of the farmer and by carrying out survey in adopted villages. Based on the need analysis of farmers, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After successful installation, testing of the proposed system is done. For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary.
Enter Name and Contact details of students involved in this project:	Mr.Kunal Mane Mob: 9108753392, Nagadarshan Koppard Mob: 7259290709, Akhilesh Patil Mob: 9449127367, Ashwat Karadigud Mob: 7760406281, Naveenkumar Gokanvi Mob:8095424048
Enter Name and Contact details of peoples those will be involved in this project (From UBA connected / adopted village):	Dr.B.V.Madiggond Mob: 9343454993, Prof.S.D.Hirekodi Mob: 9480849338, Prof.M.P.Yenagimath Mob: 9341449466, Mr.R.S.Bardol Mob: 8277010328, Mr.S.B.Beelur Mob: 8105974422, Mr.B.S.Sooji Mob:9480849343, Mr.A.A.Patil Mob:9449498248, Mr.S.N.Biranagaddi Mob:7219803176



Principal Investigator
Dr. B.V.Madiggond




HOD

Dr. B. V. Madiggond

BE, ME, PE
Prof. & Head
Dept. of Electrical & Electronics Engg
HIT NIBASOSHI-591 208



UBA Coordinator
Dr.S.N. Topannavar

	S J P N Trust's Hirasugar Institute of Technology, Nidasoshi <i>Inculcating Values, Promoting Prosperity</i> Approved by AICTE, Recognized by Govt. of Karnataka and Permanently Affiliated to VTU Belagavi. Accredited at 'A' Grade by NAAC Programmes Accredited by NBA: CSE, ECE, EEE & ME.	CSE
		Unnat Bharat Abhiyan
		Project Proposal
		2021-22

Unnat Bharat Abhiyan Project Proposal

Applied For:	Technology Development
Name of College/Institution:	Hirasugar Institute of Technology, Nidasoshi
Coordinator Name:	Dr. S. N. Topannavar
UBA Coordinator Email:	sntopannavar.mech@hsit.ac.in
UBA Coordinator Contact No:	9482440235
State:	Karnataka
District:	Belagavi
Select your SEG Name:	Ethos in Technical Education IIT Bombay
Select your RCI:	Select IIT Bombay
AISHE Code of the College:	C-1409
Title of the technology:	Artificial Intelligence based Android application to automatically Detect Plant Leaf Disease
Village where it is to be implemented:	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat

Why this technology required (Objective of the project maximum 200 word):

The external appearance is the most important quality character of agriculture. This outer appearance greatly affects the sale value and consumer behavior in buying any product. Therefore, the inspection of quality and grading system is essential in agriculture field to cultivate good healthy plants. Agriculture industry can go through a major production and economic losses which is caused by the plant diseases. This disease management is a challenging task. Usually, the diseases or its symptoms such as colored spots or streaks can be seen on the leaves or on the stem of the plants. In plants, most of the leaf diseases are caused by fungi, bacteria, and viruses. The disease caused due to these organisms is characterized by different visual symptoms that could be observed in the leaves or stem of a plant. Usually, these symptoms are detected manually. Automatic detection of various diseases can be detected with the help of machine learning and


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		Unnat Bharat Abhiyan
		Project Proposal
		2021-22

image processing. A crucial role is played by the machine learning and image processing in detection of plant disease since it provides best results and reduces the human efforts.

Total cost of the product/technology:

Site preparation cost: 15000/-

Equipment/ Machinery cost: 15000/-

Running cost, Manpower cost, Electricity cost, etc.: 10000/-

Miscellaneous expense: 10000/-

Details of the funds raised from any other agencies apart from above-mentioned:

Not Applicable

Describe your role as PI at various stage of the project (Max 500 words):

Following are the list of roles and responsibilities of PI:


1. Collection of data set by visiting the farmers of adopted village.
2. Labeling the data set by considering the view of farmers and expert persons.
3. Data preprocessing to remove the redundancy, missing values, and errors.
4. Building an AI model to automatically detect the plant leaf disease.
5. Validating the model from the farmers and expert persons.
6. Deploying the validated model on cloud platform.

Process of execution of the project

The methodology followed in the proposed project is,

Training and validating the model:

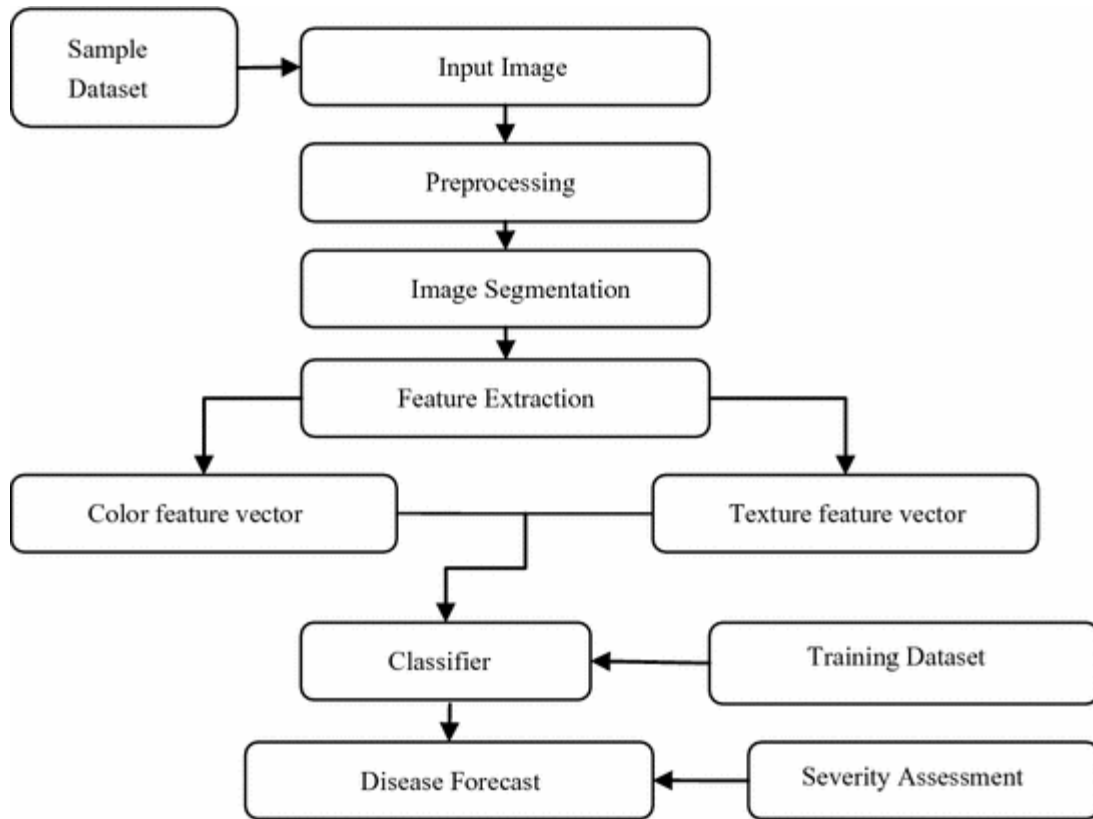
1. Collection of data set by visiting the farmers of adopted village.
2. Labeling the data set by considering the view of farmers and expert persons.
3. Data preprocessing to remove the redundancy, missing values, and errors.
4. Extract the features from the dataset.
5. Building an AI model to automatically detect the plant leaf disease.

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		Unnat Bhart Abhiyan
		Project Poposal
		2021-22

6. Deploying the validated model on cloud platform.

Use of model in real world:


1. The new input image is given as an input to the validated model.
2. The model classifies the image based on the features of the new image.



Who are the beneficiaries (ST, SC, OBC, Tribal, etc.) and potential impact of the technology on the beneficiary & village

The farmers of the adopted village are the beneficiaries of the proposed project. The proposed AI based android project automatically detects the plant leaf disease which in turn reduces the human efforts and increases the productivity.

Role of stakeholders in maintaining sustainability after the project duration (please mention point wise role of participating stakeholders)

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		Unnat Bhart Abhiyan
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		2021-22

Stakeholders can add new diseases as and when detected in the farm to improve the efficiency of the proposed project.

Execution of the project along with role of all participating stakeholders (write point wise maximum 500 words):

Initially with the help of stakeholders and expert persons data set will be collected. The dataset will be divided into different classes of disease. The data set will be used to build the model. Performance of the model is evaluated with help of stakeholders and expert persons. Finally, the evaluated model will be deployed into cloud environment.

Impact of this work on learning of students/teachers:

The students will learn

1. The process of data acquisition required for machine learning and artificial intelligence-based projects.
2. The process of data preprocessing
3. How to build AI based model and validating the model from different stake holders.
4. Deploying the model on cloud environment

Role of PI after completion of the project duration:

Collecting the new diseases detected in the farm from the stakeholders and updating the model to incorporate the new diseases. Also, tune the model to improve the overall accuracy of the system.


Enter Name and Contact details of students involved in this project:

Kashim Jakati – 9620295085

Aishwarya Gundoli – 7259550923

Mohammedakram Mujawar – 6364359803

Shruti Khot – 8722372755

	S J P N Trust's Hirasugar Institute of Technology, Nidasoshi <i>Inculcating Values, Promoting Prosperity</i> Approved by AICTE, Recognized by Govt. of Karnataka and Permanently Affiliated to VTU Belagavi. Accredited at 'A' Grade by NAAC Programmes Accredited by NBA: CSE, ECE, EEE & ME.	CSE
		UnnatBhart Abhiyan
		Project Poposal
		2021-22


Shruti Khot – 8722372755

Enter Name and Contact details of peoples those will be involved in this project (Form UBA connected / adopted village):

Dr. Mahesh Huddar

Prof. C. R. Belavi

Prof. N. M. Patel



Project Coordinator:

Dr. Mahesh Huddar

Associate Professor, Computer Science and Engineering

Hirasugar Institute of Technology, Nidasoshi

E-Mail: mghuddar.cse@hsit.ac.in


 Prof. S. V. Majaragi
HOD
Computer Science & Engg.
HIT, Nidasoshi.

UNNAT BHARAT ABHIYAN

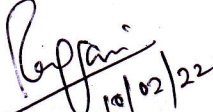
Project proposal

2021-2022

Applied For	TECHNOLOGY DEVELOPMENT			
Name Of the College/Institution	Hirasugar Institute of Technology, Nidasoshi			
Coordinator Name	Dr. S. N. Topannavar			
UBA Coordinator Email	sntopannavar.mech@hsit.ac.in			
UBA Coordinator Contact No	9482440235			
State	Karnataka			
District	Belagavi			
Block				
Select your SEG Name	Rural Energy systems (IIT-Delhi)			
Select your RCI	IIT-Bombay			
AISHE Code of the College	C-1409			
Title of the technology	Smart Motor for Agriculture			
Village where it is to be implemented	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat			
Why this technology required (Objective of the project maximum 200 word)	<p>Objectives of the project is to:</p> <ol style="list-style-type: none"> 1. Develop a GSM based cost effective solution that will provide remote access of motor through mobile Application 2. Develop low-cost water pump dry run protection for which insufficient water conditions inside an underground tank can be sensed and thus preventing any possibility of motor dry running 3. Incorporate soil moisture sensor into the irrigation system aid in scheduling water supply and distribution much more efficiently. Such gauges help to enhance irrigation for optimum plant growth. 4. Design user friendly android application using open-source platform. 5. Incorporate power line status indictor in mobile application to notify former about power-cut schedule. 			
Total cost of the product/technology	Site preparation cost	Equipment/ Machinery cost	Running cost, Manpower cost, Electricity cost, etc.	Miscellaneous expense
	10,000/-	75,000/-	5,000/-	10,000/-
Funds raised from	Not applicable			
Details of the funds raised from any other agencies apart from above-mentioned:	Not applicable			
Who are the beneficiaries (ST, SC, OBC, Tribal, etc.) And potential impact of the technology on the beneficiary &	<ol style="list-style-type: none"> 1. System reduces the burden on farmer for going to the farm field in order to check the water level in well for turning motor on/off. 2. Farmers are able to utilize highly detailed analytics to accelerate 			

village.	productivity and gain from crops in the future.
Duration of Project	12 months
Role of stakeholders in maintaining sustainability after the project duration (please mention point wise role of participating stakeholders)	Department /Institute will provide support and monitor adopted villages on regular basis and resolve the issues related to project at field.
Execution of the project along with role of all participating stakeholders (write point wise maximum 500 words):	Department /Institute is providing necessary laboratory support and testing procedure to be observed in extreme conditions in actual field.
Impact of this work on learning of students/teachers	Will enhance technical skill which include understanding of microcontroller concept, working of dry run protection, power devices, relay control mechanism, sensors and their response and programming analogy. It also helps to enhance soft skill.
Role of PI after completion of the project duration	Continuous monitoring of project at field, providing support after installation, resolve the issues after due discussion with farmers.
Enter Name and Contact details of students involved in this project	Not applicable
Enter Name and Contact details of peoples those will be involved in this project (Form UBA connected / adopted village)	Dr. R.R. Maggavi Mobile:9480275583 rrmaggavi.ece@hsit.ac.in Prof. D.B. Madihalli Mobile:9902854324 dbmadihalli@hsit.ac.in

Principal Investigator

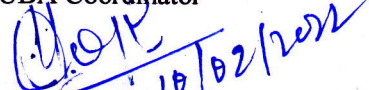

10/02/22
Dr. R.R. Maggavi
Prof. D.B. Madihalli


HOD

Dr. S. B. Akole

HOD
Electronics & Commn. Engg. Dep.
HSIT NIDASOSHI

UBA Coordinator


10/02/2022
Dr. S. N. Topannavar

Proposal By: Hirasugar Institute of Technology, Nidasoshi ()

Project Title: Smart System for Crop Prediction & Fertilizer Suggestion.

Project Objectives: The main objective of the project is

1. To develop a smart system for crop prediction and fertilizer suggestion using machine learning and IoT.
2. To develop an IOT based system which measures the collective data from the farm by monitoring the Rainfall, PH, NPK values, Temperature and Humidity.
3. To develop an intelligent crop suggestion system for farmers which utilizes the collective data from the farm related to weather and Soil to suggest the suitable crop for farmers using Machine Learning approach.
4. To Train a machine learning model using supervised learning approach capable of suggesting crops to farmers using the live dataset collected from the sensor data placed in farm.
5. To develop a software application which can be used by the farmers to check for the most suitable crops in that soil.
6. To Develop an Android application for farmers which will give updates regarding the soil NPK content and the fertilizers to be used for low NPK content. This will help farmers to test the soil by themselves without going to soil testing centers.
7. To make the entire system solar powered.

Project Justification:

- i) **Problem Statement:** The majority of farmers do not conduct soil testing and use the same agricultural cultivation methods and patterns, resulting in lower yields. There are currently no systems in place to track and analyze the data from farms itself in terms of temperature, humidity, and other key factors. A system is required that recommends different crops to farmers and warns them about replenishment.
- ii) **Priority Needs:** The only priority is given to the Farmers, to ultimately increase their yield and hence, the income.
- iii) **Proposed Approach / Technical Intervention / Customization:**

Due to the challenges that farmers experience, we are motivated to design a smart system based on IoT and machine learning that can provide farmers with in-field soil testing and planting suggestions, resulting in greater agricultural yields. This inspires us to create a system that can monitor data from the farm using various metrics, such as soil NPK values, and provide recommendations to the farmer on the best crops to produce in his farm based on the soil nutritional content and environmental parameters. An android application for remote parameter monitoring is also being developed, which will be used by farmers to display various farm parameters via IoT.

Brief Plan of Activities and Implementation Timeline:

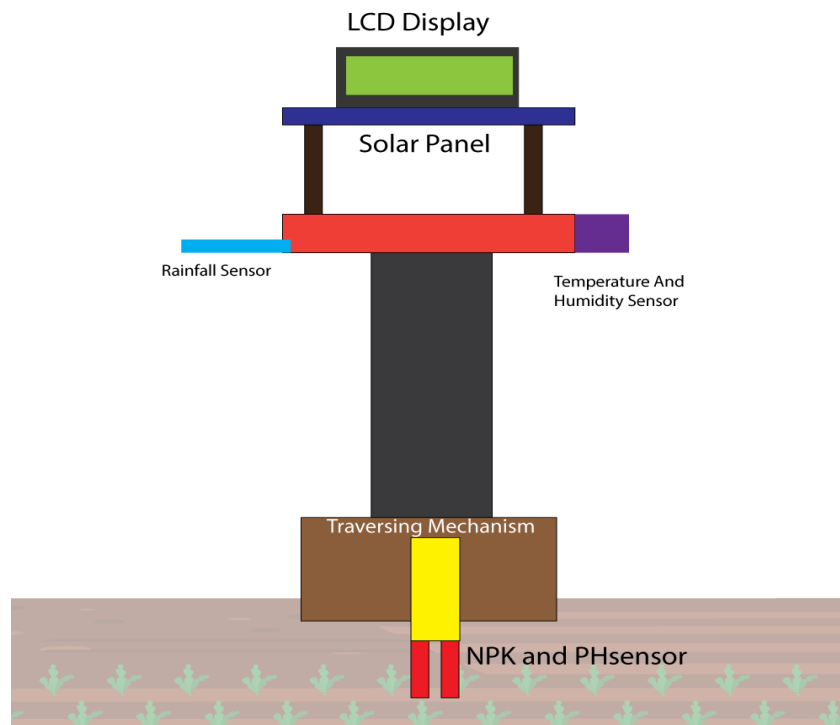
S.no	Timeline	Plan Of Activities
1.	March(1 st & 2 nd week)	Literature review and Material survey.
2.	March(3 rd & 4 th week)	Development of IOT protocol.
3.	April & May (Entire 2 months)	Development of different parameter system and data collection for testing.
4.	June(1 st , 2 nd & 3 rd weeks)	Design of Hardware and PCB fabrication.
5.	June (4 th week) & July (1 st week)	Software, Android App and Web Application development.
6.	July(2 nd , 3 rd & 4 th weeks)	Programming and Optimization.

- **Timeline For Work:** 5 Months

Methodology, Materials and Financial Resources:

As shown in the conceptual diagram the system consists of the smart system for crop prediction and fertilizer suggestion using machine learning and IOT. The proposed project consists of **two parts**, the smart device to be installed in the farms and the IOT portal to notify the farmers. Smart device monitors the NPK content of the soil to analyze the nutritional content and the fertilizer requirement. Sensor interfaced to the controller detects if the soil requires fertilizer and what type of the fertilizer. Data set obtained is used to train a machine learning model which can be used for crop prediction. The IOT based system consist of an android application which can

be used by farmers for monitoring the different parameters in the farm and also for visualizing the suggestions from the machine learning based system. The entire system is solar powered making it green eco-friendly and cost efficient to operate or afford for farmers.



- References used for adopting the methodology:
 - i. Jejurkar Siddhi, S.S. Bhosale Meghna, D. N. Wavhal, “Crop Predication and Diseases Detection Using Machine Learning”, International Journal of Scientific Research in Computer Science Engineering and Information Technology (2019).
 - ii. Kumar, Y. Jeevan Nagendra, V. Spandana, V. S. Vaishnavi, K. Neha, and R. R. Devi, “Supervised Machine learning Approach for Crop Yield Prediction in Agriculture Sector”, International Conference on Communication and Electronics Systems (ICCES), IEEE (2020).
 - iii. Archana Gupta, Dharmil Nagda, Pratiksha Nikhare, Atharva Sandbhor, “Smart Crop Prediction using IoT and Machine Learning”, International Research Journal of Engineering and Technology (IRJET) (2021).
- Materials/ Equipment Required:

Hardware:

 - Raspberry PI SBC
 - NPK sensor

- pH sensor
- LCD display
- Temperature Sensor
- Humidity Sensor
- Rainfall Sensor
- Buzzer
- DC motors
- CP2102 USB Serial Module
- L298N motor Driver
- Solar panel
- Charge controller
- Battery
- An Android Device with Android 5+ operating system
- A system with following specifications
 - 4 GB RAM (8 GB recommended)
 - Core i3/i5 processor
 - At least 3 GB of free disk Space
 - Operating system Windows/Mac/UBUNTU
 - 1280 x 800 minimum screen resolution

SOFTWARE:

- Thonny IDE
- Android Studio
- WAMP Server
- Serial Monitor

Budget Details:

S.No.	Resources	Amount
1.	Materials and Consumables	80,000
2.	Travel and Labour	15,500
3.	Miscellaneous	5,500

Total: 1,01,000

- **Outcomes/ Impact of the Project:**

1. The system can help farmers automatically detect the nutritional content of the soil.
2. The system is internet controlled, hence no limitation of working range as it can be visualized from any part of the world.
3. There is no need for farmers to take the soil to soil testing centres as entire testing happens in the farm itself.
4. Fertilizer intimation system alerts the farmers with type of fertilizer to be given from time to time.
5. The system can be used ML based model for crop suggestion which suggests farmers with the best suitable crops for the field which can deliver maximum produce.
6. System is scalable as is uses machine learning.
7. The sensor nodes give all the live data to the farmer using internet.
8. System is solar powered hence cost free and easy to operate.

Thus, leading to a higher yield to the farmers.

Funding From Any Other Sources: NA

Applied for :	Technology Development
Name of the College/ Institution :	Hirasugar Institute of Technology, Nidasohsi
UBA Coordinator Name :	Dr.S.N.Topannavar
UBA Coordinator mail id :	sntopannavar.mech@hsit.ac.in
UBA Coordinator Contact No :	9482440235
State :	Karnataka, Dist: Belagavi Block: Hukkeri
SEG Name:	Expert Group (SEG) of IIT Delhi, Rural Energy Systems
RCI:	IIT Bombay
AISHE Code of the College:	C-1409
Adopted Villages are:	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat
Title:	Advanced Solar Irrigation System
Village where it is to be implemented:	Nidasoshi
Why this technology is required (Objective of the project maximum 200 word):	Rural income largely depends on agriculture, especially farmers growing vegetables, flowers suffer due to power cuts. At present 3 phase power availability is only for few hours in rural areas usually, after midnight. This problem is addressed in our proposal, wherein the power supply is available during day time for irrigation purpose helping farmers to schedule their other activities such as sowing, spraying, harvesting etc. In the evening they are sorting and packing their crops. Early morning they are busy with marketing of vegetables/ flowers etc. Hence, it is feasible to irrigate during day by utilizing solar energy.
Describe your role as PI at various stage of the project (max 500 words):	The role of PI is to identify the needs of the farmer and by carrying out survey in adopted villages. Based on the need analysis of farmers, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After successful installation, testing of the proposed system is done. For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary.
Process of execution of the project:	A survey regarding the needs of the beneficiary villages is carried out with the help of the students. Collected survey information is analysed and a proposal is prepared based on the needs. A detailed schedule of implementation is prepared. The detailed proposal with all necessary information is submitted for approval. If the submitted proposal is approved and sanctioned, then all the materials will be procured through a proper process of quotation, comparison and placing order. After receiving all the required materials necessary structure is built, all the required components are assembled and then tested for its proper operation. The beneficiaries will be given awareness about its operation and maintenance. Necessary technical support will be provided as per the need.
Who are the beneficiaries (ST, SC, OBC, Tribal etc.) and potential impact of technology on the beneficiary and village :	OBC
Duration of Project:	6 Weeks



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Role of stake holders in maintaining sustainability after the project duration (please mention point wise role of participating stake holders):	1) Routine maintenance of the installed system 2) Cleaning of the solar panels 3) Safety checks on regular basis.
Execution of the project along with role of all participating stakeholders (write point wise max 500 words) :	Survey, need analysis, material listing, purchasing, installing, and testing
Impact of this work on learning of students/ teachers:	Students/ teachers will be able to plan, schedule and implement the project in a team.
Role of PI after completion of the project duration.	The role of PI is to identify the needs of the farmer and by carrying out survey in adopted villages. Based on the need analysis of farmers, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After successful installation, testing of the proposed system is done. For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary.

Dr. S.N. Topannavar
07/02/24

Dr.S.N.Topannavar
Principal Investigator

HOD
Mechanical Engg.
HIT, Nidasoshi



Dr. S.N. Topannavar
07/02/24

Dr.S.N.Topannavar
UBA Program Coordinator

Applied for :	Technology Development
Name of the College/ Institution :	Hirasugar Institute of Technology, Nidasohsi
UBA Coordinator Name :	Dr.S.N.Topannavar
UBA Coordinator mail id :	sntopannavar.mech@hsit.ac.in
UBA Coordinator Contact No :	9482440235
State :	Taluka: Hukkeri Dist: Belagavi Karnataka PIN:591236

PROJECT TITLE: SMART WATER BODY MONITOR AND CLEANER

Objectives:

- To save and rejuvenate village and urban ponds, lakes and rivers
- To monitor the amount of sewage and effluents resulted in ponds, lakes and rivers creating water pollution
- To provide clean and mineralised water for specific applications
- To application based treatment of waste water/water for domestic, agriculture, hospital, industry purposes.
- To reduce toxicity and removal of debris immediately
- To create water bodies suitable for swimming and water games for kids



Justification for the project:

i) Problem Statement:

Most of the available machines are built with high cost, more starting capital. These machines are also purely mechanical, which states that if a failure occurs, it is purely mechanical. Once a component fails, it will cause complete mechanical after effects, due to mechanical damage. We have already discussed about the importance of cleaning our existing water bodies to ensure betterment. This project emphasizes on design and fabrication of the lake waste cleaning machine. The project has been done looking at the current situation of our national rivers and lakes which are dumped with crores and crores of liters of sewage and loaded with pollutants, toxic materials, debris etc. Analysis is of key importance as it helps to reduce cost and reduce the number of mechanical parts, thus reducing maintenance cost.

ii) Priority Needs:

1. The prime priority to the farmers and village and urban people for drinking and agriculture
2. The second priority to industry and hospital.

iii) Proposed approach/Technical Intervention/customization:

Large-scale shallow water dredging requires large-scale dredging capacity. Traditional big dredgers with limited mobility are poorly suited for inland waters. With a fleet of amphibious multipurpose Water masters you are equipped to handle all kinds of environments and projects of all sizes. However, These machines are available at a very high cost, with a higher number of mechanical parts, which are more likely to fail. If a single component fails then the whole system will collapse.

In our country, the lack of monitoring or control of the amount of sewage and effluents has resulted in most lakes and rivers being polluted completely, some of them even beyond repair. In urban cities, many lakes were turned so toxic that authorities have given up on it. It is necessary to ensure that our existing lakes and rivers can be saved from this same fate. This project emphasizes on design and fabrication of the lake waste cleaning and treating machine.

Lakes and rivers are the lifeblood of civilization. They provide essential water to homes, industries and essential livestock. Without the presence of a large body of fresh water, no civilization has been able to thrive. They directly and indirectly provide habitats to millions of other creatures and organisms. They are also involved in transport between two parts of the

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country. They are also involved in irrigation. In our country, the lack of checking or control of the amount of sewage and effluents has resulted in most lakes and rivers being polluted completely, some of them even beyond repair. The lake has turned so toxic that authorities have given up on it. We can ensure that our existing lakes and rivers can be saved from this same fate.

This project emphasizes on design and fabrication of the lake waste cleaning machine. The project has been done looking at the current situation of our national rivers and lakes which are dumped with crores of liters of sewage and loaded with pollutants, toxic materials, debris etc. At least on the surface level, it will aim to reduce pollution by up to 85 percent. Most common modeling and analysis tools used in today industries are CATIA V5 CAD Modeler. The smart tools are embedded to monitor and control the chemical compositions based on the applications and purposes.

iv) Brief plan of activities and implementation timeline:

Project starts from March, 2024 :

Month	Weeks	Tasks Completed
March	2 weeks	To figure out the problem of water resources in village and urban areas
March	2 weeks	Materials Selection & modelling
April	3 weeks	Design Thinking
April-May	4 weeks	Fabrication Work
May-June	5 weeks	Experimentation with project
June-July	4 weeks	Analysis, Results & Discussion
August	2 weeks	Conclusion

Methodology, Materials and Financial Resources:

Methodology:

The stepwise methodology to complete our Project is as below.

- Step 01: Literature Survey
- Step 02: Defining problem statement of the Project(Title)
- Step 03: With the help scope defining objective
- Step 04: Materials selection and Modelling
- Step 05: Design Thinking
- Step 06: Fabrication work
- Step 07: Experimentation with ponds and lakes
- Step 08: Result & Discussion
- Step 09: Analysis & Recommendation
- Step 10: Conclusion



Materials and Parts:

- 1. Hollow Pipes , 2. L- Sections 43. Inclined Sections 4. T- sections . Shafts 6. Motors. Gears . Sprockets 9. Bearings 10. Collecting mechanisms 11. Chains 12. Carrying Belts 13. Water Wheels 14. Batteries 15. Nuts and Bolts 16. U shaped sections 17. Connecting Link 18. Electronic Devices 19 Sensors 20. Soft wares etc.

Financial Resources:

Budget	Amount in Rs.
1. Hollow Pipes , 2. L- Sections 43. Inclined Sections 4. T- sections . Shafts 6. Motors. Gears . Sprockets 9. Bearings 10. Collecting mechanisms 11. Chains 12. Carrying Belts 13. Water Wheels 14. Batteries 15. Nuts and Bolts 16. U shaped sections 17. Connecting	65000.00

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Link 18. Electronic Devices 19 Sensors 20. Soft wares etc.	
b) Fabrication Labor Charge	15000.00
c) Travelling Expenses & Running cost	20000.00
d) Site preparation and experimentation cost	15000.00
e) Miscellaneous	5000.00
Total cost of the Technology in Rs.	120000.00

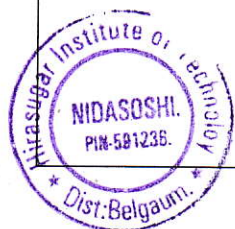
Outcome of the Project:

The expected outcomes of our project are as below:

- Clean urban ponds, lakes and rivers of villages and urban
- Mechanism for regular monitoring and cleaning of sewage and effluents resulted in ponds, lakes and rivers creating water pollution
- Clean and mineralised/nutritional water for specific applications
- Application based treatment of waste water/water for domestic, agriculture, hospital, industry purposes.
- Devise to reduce toxicity and debris immediately

Proposal in Online Format

Applied for :	Technology Development	
Name of the College/ Institution :	Hirasugar Institute of Technology, Nidasoshi	
UBA Coordinator Name :	Dr.S.N.Topannavar	
UBA Coordinator mail id :	sntopannavar.mech@hsit.ac.in	
UBA Coordinator Contact No :	9482440235	
State :	Taluka: Hukkeri Dist: Belagavi Karnataka PIN:591236	
SEG Name:	1) Sanitation & Solid Waste Management, IIT Madras 2) Sustainable Agriculture System, IARI New Delhi	
RCI:	Karnataka University Dharwad	
AISHE Code of the College:	C-1409	
Adopted Villages are:	Nidasoshi, Ammanagi, Kesti, Borgal & Hattarwat	
Title:	SMART WATER BODY MONITOR AND CLEANER	
Village where it is to be implemented:	Adopted Villages: Nidasoshi, Ammanagi, Kesti, Borgal and Hattarwat	
Why this technology is required (Objective of the project maximum 200 word):	<ul style="list-style-type: none"> ➤ To save and rejuvenate village and urban ponds, lakes and rivers ➤ To monitor the amount of sewage and effluents resulted in ponds, lakes and rivers creating water pollution ➤ To provide clean and mineralised water for specific applications ➤ To application based treatment of waste water/water for domestic, agriculture, hospital, industry purposes. ➤ To reduce toxicity and removal of debris immediately 	
Total Cost of the Product/Technology:	Budget	Amount in Rs.
	1. Hollow Pipes , 2. L- Sections 43. Inclined Sections 4. T- sections . Shafts 6. Motors. Gears . Sprockets 9. Bearings 10. Collecting mechanisms 11. Chains 12. Carrying Belts 13. Water Wheels 14. Batteries 15. Nuts and Bolts 16. U shaped sections 17. Connecting Link 18. Electronic Devices 19 Sensors 20. Soft wares	65000.00



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	etc.	
	b) Fabrication Labor Charge	15000.00
	c) Travelling Expenses & Running cost	20000.00
	d) Site preparation and experimentation cost	15000.00
	e) Miscellaneous	5000.00
	Total cost of the Technology in Rs.	120000.00
Fund raised from:	NA	
Describe your role as PI at various stage of the project (max 500 words):	<p>The role of PI is to identify the ponds and lakes by carrying out the survey in adopted villages and nearby urban areas. Based on the need analysis of ponds and lakes, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After designing, testing of the proposed system is done.</p> <p>For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary.</p> <ol style="list-style-type: none"> 1. Design and Development Stage: Suitable Human resource mobilization and laboratory supports 2. Implementation Stage: Coordination between Gram Panchayat & SEG Members 3. Outcome Analysis Stage: Suitable human resource mobilization 	
Process of execution of the project:	<p>The stepwise methodology to complete our Project is as below.</p> <p>Step 01: Literature Survey</p> <p>Step 02: Defining problem statement of the Project(Title)</p> <p>Step 03: With the help scope defining objective</p> <p>Step 04: Materials selection and Modelling</p> <p>Step 05: Design Thinking</p> <p>Step 06: Fabrication work</p> <p>Step 07: Experimentation with ponds and lakes</p> <p>Step 08: Result & Discussion</p> <p>Step 09: Analysis & Recommendation</p> <p>Step 10: Conclusion</p>	
Who are the beneficiaries (ST, SC, OBC, Tribal etc.) and potential impact of technology on the beneficiary and village :	<ol style="list-style-type: none"> 1. The prime priority to the farmers and village and urban people for drinking and agriculture 2. The second priority to industry and hospital. 	
Duration of Project:	09 Months	
Role of stake holders in maintaining sustainability after the project duration (please mention point wise role of participating stake holders):	<ol style="list-style-type: none"> 1) Electronic and mechanical system related maintenance work 2) Acquiring skills to operate automated system 3) Suggesting to institute level SEGs for further improvement in design and development 4) Addressing the grievances of the farmers and resolving 5) Scaling of the project 	
Execution of the project along	i) Problem Statement:	



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with role of all participating stakeholders (write point wise max 500 words) :

Most of the available machines are built with high cost, more starting capital. These machines are also purely mechanical, which states that if a failure occurs, it is purely mechanical. Once a component fails, it will cause complete mechanical after effects, due to mechanical damage.

We have already discussed about the importance of cleaning our existing water bodies to ensure betterment. This project emphasizes on design and fabrication of the lake waste cleaning machine. The project has been done looking at the current situation of our national rivers and lakes which are dumped with crores and crores of liters of sewage and loaded with pollutants, toxic materials, debris etc. Analysis is of key importance as it helps to reduce cost and reduce the number of mechanical parts, thus reducing maintenance cost.

ii) Priority Needs:

1. The prime priority to the farmers and village and urban people for drinking and agriculture
2. The second priority to industry and hospital.

iii) Proposed approach / Technical Intervention/ customization:

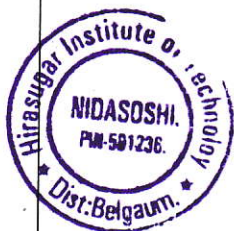
Large-scale shallow water dredging requires large-scale dredging capacity. Traditional big dredgers with limited mobility are poorly suited for inland waters. With a fleet of amphibious multipurpose Water masters you are equipped to handle all kinds of environments and projects of all sizes. However, These machines are available at a very high cost, with a higher number of mechanical parts, which are more likely to fail. If a single component fails then the whole system will collapse.

In our country, the lack of monitoring or control of the amount of sewage and effluents has resulted in most lakes and rivers being polluted completely, some of them even beyond repair. In urban cities, many lakes were turned so toxic that authorities have given up on it. It is necessary to ensure that our existing lakes and rivers can be saved from this same fate. This project emphasizes on design and fabrication of the lake waste cleaning and treating machine.

Lakes and rivers are the lifeblood of civilization. They provide essential water to homes, industries and essential livestock.

Without the presence of a large body of fresh water, no civilization has been able to thrive. They directly and indirectly provide habitats to millions of other creatures and organisms.

They are also involved in transport between two parts of the country. They are also involved in irrigation. This project emphasizes on design and fabrication of the lake waste cleaning machine. The project has been done looking at the current situation of our national rivers and lakes which are dumped with crores of liters of sewage and loaded with pollutants, toxic materials, debris etc. At least on the surface level, it will aim to reduce pollution by up to 85 percent. Most common modeling and analysis tools used in today industries are CATIA V5 CAD Modeler. The smart tools are embedded to monitor and control the chemical compositions based on the applications and



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	purposes.
Impact of this work on learning of students/ teachers:	Resolving the Water management and agriculture related problems related to their respective villages and urban areas. Using of advanced technology to enhance the value of water. Technology intervention in the waste water management.
Role of PI after completion of the project duration.	<ol style="list-style-type: none"> 1) Scaling of the project to reach all need people of the adopted villages 2) Preparing DPR to the district level 3) Automation for monitoring and control mechanism to increase cleanliness of stored water 4) Steps to increase the performance and efficiency of the project 5) Design and development towards increasing the quality of waste water and stored water. 6) Steps towards to add relevant values to the water bodies.
Enter Name and Contact details of students involved in this project:	<ol style="list-style-type: none"> 1. Mallikarjun Shettennavar E-mail: ramappakanrwi@gmail.com Mobile No.: 7026377055 2. Basavaraj Balekundri Email id: bassumbalekundri@gmail.com Mobile No.: 6360177645 3. Manoj Giddali Email id: manojgiddali4@gmail.com Mobile No.: 9731638562 4. Vinay S Hiremath Email id: vinayhiremath7064@gmail.com Mobile No.: 9482937683 5. Abhishek Bevinakoppamath Email id: abhibevinakoppamath@gmail.com Mobile No.: 8197360660
Enter Name and Contact details of peoples those will be involved in this project (From UBA connected / adopted village):	<ol style="list-style-type: none"> 1. Prof.M.A.Hipparagi (Mobile no.:7411507405) 2. Prof,M,S.Futane (Mobile no.:9164105035) 3. Dr.K.M.Akkoli (Mobile no.:9739114856) 4. Prof.S.A.Goudadi (Mobile no.:9448876682)

Dr.S.N.Topannavar
Principal Investigator

HOD
Mechanical Engg.
HIT, Nidasoshi



Dr.S.N.Topannavar
UBA Program Coordinator

HOD
Mechanical Engg.
HIT, Nidasoshi



**PROPOSALS (TECHNOLOGY DEVELOPMENT)
Upper Cap Funding Rs.1,00,000**



SEG Name	:	Sustainable Agriculture System
SEG Contact Details	:	Dr. R.N. Padaria, Indian Agricultural Research Institute, New Delhi.
Proposal Id	:	C-1409/KA/BLG/SASM/1LAKH/1
Title of the Technology	:	SMART WATER BODY MONITOR AND CLEANER
Amount Requested For	:	99000
Date of Proposal Submitted	:	09-02-2024
PI Contact Details	:	Dr.S.N.Topannavar, sntopannavar.mech@hsit.ac.in, 9482440235
State	:	Karnataka
District	:	Belagavi
Village Name	:	Nidasoshi
Current Status	:	Forward to SEG

Proposal submitted by	Hirasugar Institute of Technology, Nidasoshi	RCI	Karnataka University, Dharwad (AISHE Code:-U-0230)
Name of College/Institution	Hirasugar Institute of Technology, Nidasoshi (AISHE Code:-C-1409)	State	Karnataka
District	Belagavi	Village Name	Nidasoshi
Block		Date of submission	09-02-2024
Coordinator Name	Dr.S.N.Topannavar	Email ID	sntopannavar.mech@hsit.ac.in
Mobile No	9482440235	Principal Investigator	Dr S N Topannavar
Email of Principal Investigator	sntopannavar.mech@hsit.ac.in	Mobile No of Principal Investigator	9482440235

Proposal Overview

Subject Expert Group:	Sustainable Agriculture System
Title Of Technology:	Technology Development
Village where it is to be implemented	Nidasoshi

<p>Background of the Project (Priority Need)</p>	<p>Priority Needs: 1. The prime priority to the farmers and village and urban people for drinking and agriculture 2. The second priority to industry and hospital. Large-scale shallow water dredging requires large-scale dredging capacity. Traditional big dredgers with limited mobility are poorly suited for inland waters. With a fleet of amphibious multipurpose Water masters you are equipped to handle all kinds of environments and projects of all sizes. However, These machines are available at a very high cost, with a higher number of mechanical parts, which are more likely to fail. If a single component fails then the whole system will collapse. In our country, the lack of monitoring or control of the amount of sewage and effluents has resulted in most lakes and rivers being polluted completely, some of them even beyond repair. In urban cities, many lakes were turned so toxic that authorities have given up on it. It is necessary to ensure that our existing lakes and rivers can be saved from this same fate. This project emphasizes on design and fabrication of the lake waste cleaning and treating machine. Lakes and rivers are the lifeblood of civilization. They provide essential water to homes, industries and essential livestock. Without the presence of a large body of fresh water, no civilization has been able to thrive. They directly and indirectly provide habitats to millions of other creatures and organisms. They are also involved in transport between two parts of the country. They are also involved in irrigation. In our country, the lack of checking or control of the amount of sewage and effluents has resulted in most lakes and rivers being polluted completely, some of them even beyond repair. The lake has turned so toxic that authorities have given up on it. We can ensure that our existing lakes and rivers can be saved from this same fate. This project emphasizes on design and fabrication of the lake waste cleaning machine. The project has been done looking at the current situation of our national rivers and lakes which are dumped with crores of liters of sewage and loaded with pollutants, toxic materials, debris etc. At least on the surface level, it will aim to reduce pollution by up to 85 percent. Most common modeling and analysis tools used in today industries are CATIA V5 CAD Modeler. The smart tools are embedded to monitor and control the chemical compositions based on the applications and purposes.</p>
<p>Brief Objective/s of the Project</p>	<p>Objectives: □ To save and rejuvenate village and urban ponds, lakes and rivers □ To monitor the amount of sewage and effluents resulted in ponds, lakes and rivers creating water pollution □ To provide clean and mineralised water for specific applications □ To application based treatment of waste water/water for domestic, agriculture, hospital, industry purposes. □ To reduce toxicity and removal of debris immediately □ To create water bodies suitable for swimming and water games for kids</p>

<p>Methodology to be Adopted</p>	<p>Justification for the project: i) Problem Statement: Most of the available machines are built with high cost, more starting capital. These machines are also purely mechanical, which states that if a failure occurs, it is purely mechanical. Once a component fails, it will cause complete mechanical after effects, due to mechanical damage. We have already discussed about the importance of cleaning our existing water bodies to ensure betterment. This project emphasizes on design and fabrication of the lake waste cleaning machine. The project has been done looking at the current situation of our national rivers and lakes which are dumped with crores and crores of liters of sewage and loaded with pollutants, toxic materials, debris etc. Analysis is of key importance as it helps to reduce cost and reduce the number of mechanical parts, thus reducing maintenance cost. Large-scale shallow water dredging requires large-scale dredging capacity. Traditional big dredgers with limited mobility are poorly suited for inland waters. With a fleet of amphibious multipurpose Water masters you are equipped to handle all kinds of environments and projects of all sizes. However, These machines are available at a very high cost, with a higher number of mechanical parts, which are more likely to fail. If a single component fails then the whole system will collapse. In our country, the lack of monitoring or control of the amount of sewage and effluents has resulted in most lakes and rivers being polluted completely, some of them even beyond repair. In urban cities, many lakes were turned so toxic that authorities have given up on it. It is necessary to ensure that our existing lakes and rivers can be saved from this same fate. This project emphasizes on design and fabrication of the lake waste cleaning and treating machine. Lakes and rivers are the lifeblood of civilization. They provide essential water to homes, industries and essential livestock. Without the presence of a large body of fresh water, no civilization has been able to thrive. They directly and indirectly provide habitats to millions of other creatures and organisms. They are also involved in transport between two parts of the country. They are also involved in irrigation. In our country, the lack of checking or control of the amount of sewage and effluents has resulted in most lakes and rivers being polluted completely, some of them even beyond repair. The lake has turned so toxic that authorities have given up on it. We can ensure that our existing lakes and rivers can be saved from this same fate. This project emphasizes on design and fabrication of the lake waste cleaning machine. The project has been done looking at the current situation of our national rivers and lakes which are dumped with crores of liters of sewage and loaded with pollutants, toxic materials, debris etc. At least on the surface level, it will aim to reduce pollution by up to 85 percent. Most common modeling and analysis tools used in today industries are CATIA V5 CAD Modeler. The smart tools are embedded to monitor and control the chemical compositions based on the applications and purposes.</p>
<p>Funds Raised from Gram Panchayat</p>	<p>District</p>
<p>Details of the funds raised from other agencies</p>	<p>To scale-up project, we want to apply to the district level related government and non government agencies</p>
<p>Describe your role at various stage of the Project</p>	<p>The role of PI is to identify the ponds and lakes by carrying out the survey in adopted villages and nearby urban areas. Based on the need analysis of ponds and lakes, technically feasible and economically viable system design is proposed for technological development and implementation through procurement of materials and accessories. After designing, testing of the proposed system is done. For smooth and safe operation of the system, necessary awareness with all information related to the project is provided to the beneficiary. 1. Design and Development Stage: Suitable Human resource mobilization and laboratory supports 2. Implementation Stage: Coordination between Gram Panchayat & SEG Members 3. Outcome Analysis Stage: Suitable human resource mobilization</p>

Describe your role at various stage of the project	The stepwise methodology to complete our Project is as below. Step 01: Literature Survey Step 02: Defining problem statement of the Project(Title) Step 03: With the help scope defining objective Step 04: Materials selection and Modelling Step 05: Design Thinking Step 06: Fabrication work Step 07: Experimentation with ponds and lakes Step 08: Result & Discussion Step 09: Analysis & Recommendation Step 10: Conclusion
Impact on village/ Beneficiaries	1. The prime priority to the farmers and village and urban people for drinking and agriculture 2. The second priority to industry and hospital. Impact: 1.Clean water bodies 2. Village and urban society will involve in the water saving and cleaning 3. Village people learn to operate and maintain advanced technology for waste water management 4. Agriculture community will educate about the advanced technology for controlled irrigation and pesticide 5. Importance of rejuvenating of available water bodies 6. Giving new birth to dead water bodies in adopted villages and nearby urban areas 7. Awareness and responsibility of water management among the PI students and nearby villages
How to maintain future sustainability of installed technology in the village	1) Scaling of the project to reach all need people of the adopted villages 2) Preparing DPR to the district level 3) Automation for monitoring and control mechanism to increase cleanliness of stored water 4) Steps to increase the performance and efficiency of the project 5) Design and development towards increasing the quality of waste water and stored water. 6) Steps towards to add relevant values to the water bodies.
Impact of this work on learning of Students	Impact: 1.Clean water bodies 2. Village and urban society will involve in the water saving and cleaning 3. Village people learn to operate and maintain advanced technology for waste water management 4. Agriculture community will educate about the advanced technology for controlled irrigation and pesticide 5. Importance of rejuvenating of available water bodies 6. Giving new birth to dead water bodies in adopted villages and nearby urban areas 7. Awareness and responsibility of water management among the PI students and nearby villages
Impact of this work on learning of Teacher	Impact: 1.Clean water bodies 2. Village and urban society will involve in the water saving and cleaning 3. Village people learn to operate and maintain advanced technology for waste water management 4. Agriculture community will educate about the advanced technology for controlled irrigation and pesticide 5. Importance of rejuvenating of available water bodies 6. Giving new birth to dead water bodies in adopted villages and nearby urban areas 7. Awareness and responsibility of water management among the PI students and nearby villages
Role of PI after compilation of the project duration	1) Scaling of the project to reach all need people of the adopted villages 2) Preparing DPR to the district level 3) Automation for monitoring and control mechanism to increase cleanliness of stored water 4) Steps to increase the performance and efficiency of the project 5) Design and development towards increasing the quality of waste water and stored water. 6) Steps towards to add relevant values to the water bodies.
Duration of monitoring by PI Post Completion of the project	2 years will be monitored after implementation of the project successfully
Supporting Document	View Document View Prototype

Total cost of the Product / Technology

S.No	Categories of Fund	Total cost of the Product / Technology
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1	Site Preparation Cost	5000
2	Equipment/Machinery cost	65000
3	Running Cost	10000
4	Manpower Cost	10000
5	Electricity Cost	5000
6	Miscellaneous Expense	4000
Total		99000

Observation / Comments

Comment By PI	All documents are submitted. Please verify. Date:09-02-2024
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