

डॉ. आशुतोष अ. मुरकुटे  
निदेशक  
Dr. Ashutosh A. Murkute  
Director



महात्मा गांधी ग्रामीण औद्योगीकरण संस्थान  
Mahatma Gandhi Institute for  
Rural Industrialization  
सुक्ष्म, लघु और मध्यम उद्यम मंत्रालय, भारत सरकार के अधीन राष्ट्रीय संस्थान  
A National Institute under Ministry of MSME, Govt. of India

Ref No-MGIRI/S&T/RC&E/2023-24/ 783

Date : 07/03/2024

To  
The Director,  
Directorate of S&T,  
KVIC, Mumbai.

Subject - S&T Project titled " Study and identification of a standard toolkits for wooden furniture making artisans " - regd.

Dear Sir,

With reference to the e-mail received on 6<sup>th</sup> March 2024, the S&T project proposal and its title has been revised as suggested. Certainly, the selected set of power tools will give an opportunity for the Directorate of RENTI, KVIC, to start a new program for the artisans of wooden furniture.

Therefore, it is requested that kindly approve the S&T project proposal as soon as possible because this project is in need of time. Also, to strengthen the scheme PM Vishwakarma Yojana, it is necessary to make successful modules that can be replicated

Thank you.

7/3/24  
Director

मगनवाडी, वर्धा -442001, महाराष्ट्र, भारत  
फोन क्र. : 91-7152-253512

Maganwadi, Wardha 442001, Maharashtra, India

Phone No : +91-7152-253512

Email : director.mgiri@gmail.com Website : www.mgiri.org

**Annexure-II**  
**(Ref : S.O. No.1739 Dt: 29.06.2015)**

**DIRECTORATE OF SCIENCE & TECHNOLOGY  
OFFICE OF THE COMMISSIONER KVI  
“Gramodaya” 3, IRLA ROAD, VILE-PARLE (W)  
MUMBAI-400056.**

**R&D project proposal (Year2023-24)**

**I - PART-A**

1.	Name of the Institution - <b>Mahatma Gandhi Institute for Rural Industrialization (MGIRI)</b>	
2.	Institutional Structure/Registration Details	
2a	Legal Status	A national Institute under the Ministry of MSME
2b	Date of Registration	Attach Certificate of Registration
2c	Registered Address	Maganwadi, Ramnagar, Wardha -442001 Maharashtra
2d	Office Address/Locations	Phone: 07152 – 253512, 253513 Fax: 07512 - 240328 e-mail: director.mgiri@gmail.com
2e	Affiliated to KVIC	Yes/No, NA If yes, provide Certificate No. _____ Validity of Certificate

3. Validity date of Registration (in case of NGO's): NA
4. Name & Designation of the head of the organization: **Dr Ashutosh A Murkute**, Director, MGIRI Wardha.
5. Name, Designation & address of the Project Co-ordinator & Co-coordinator:

Project Coordinator	Project Co-coordinator
<b>Dr. Shashi Prakash Mishra,</b> Principal Scientific Officer Dept of Rural Craft & Engg, Mahatma Gandhi Institute for Rural Industrialization Maganwadi, Ramnagar, Wardha -442001 Maharashtra E-mail: <a href="mailto:spm652002@gmail.com">spm652002@gmail.com</a> Mobile - +918329919715	<b>Mr. Vinod Wankar,</b> Senior Scientific Officer, Dept of Rural Craft &Engg, Mahatma Gandhi Institute for Rural Industrialization Maganwadi, Ramnagar, Wardha -442001 Maharashtra E-mail: <a href="mailto:wankar.vinod@gmail.com">wankar.vinod@gmail.com</a> Mobile - +919890217175

(Bio- data of the Project Co-ordinator should be enclosed) Annexure 1

6. Background of the organization:

(a) Past experience in R&D work in the KVI sector and micro-enterprise and entrepreneurship development need to be given separate sheets (details of work done in other areas need not be given). Since its inception, MGIRI has been dedicated for R&D work of KVI sector.

**Technology development** – The following technologies are developed for different artisans' cluster under the RC&E Division -

**For pottery industries-**

- Home scale energy efficient blunger - Successfully disseminated more than 1500 nos potter's wheel to field through KVIC.
- Home scale energy efficient (solar ready) blunger - Successfully disseminated more than 500 nos potter's wheel to field through KVIC.
- Energy efficient (solar ready) potter's wheel – Successfully disseminated more than 15000 nos potter's wheel to field through KVIC.
- Energy efficient AC potter's wheel - Successfully disseminated more than 15000 nos potter's wheel to field through KVIC.
- Natural colours for terracotta products.
- Natural colour for clay idols.
- Gas kiln for small terracotta products

**For wood industries-**

- Heavy duty (solar ready) wood lathe- Successfully disseminated more than 250 nos Solar ready wood lathe to field through KVIC.
- Energy efficient AC wood lathe

(b) Infrastructure facilities and expertise available (give details).

**Facilities available at Rural craft and engineering section, MGIRI, Wardha-**

- Well-equipped workshop for design and fabrication of prototypes needed by various sections.
- A unique Artisan's Complex train artisanal entrepreneurs in the Vishwakarma Gurukul style and to enable market feedback for their products.

(c) Details of completed and ongoing projects during the last 3 years.

Sr. No.	Title of the project	Start date- Completion date	Name and full address of funding agency	Amount sanctioned*	Amount received*
	Consultative workshop on papier mache	18-22 Dec 2023	KVIC, Mumbai	Rs5.75 Lakhs	Rs5.75 Lakhs

\*Enclose copies of the sanction – Only in-house R&D is going on.

7. **District / Area to be taken up for the project:** - MGIRI will identify with the help of State KVIC Offices the Master craftsman/artisans from different clusters / experts who has worked or is working in the field of furniture manufacturing and ask them to be part of the development activity of the industry.
8. Location of projects implementation and details thereon. N.A.
9. If any developmental activity has been done in the proposed location prior to submission of this proposal by the Project Coordinator or the Organization, the details may be given in brief. NA
10. Details of infrastructure of the organization in the proposed location. NA.

1. **Title of the R & D proposed** – “Study and identification of a standard toolkits for wooden furniture making artisans”.
2. **Objectives of the proposed study**- The main objectives of the project proposal are the following: -
  - i. to identify the set of best power tools for furniture manufacturing artisans.
  - ii. to identify ten furniture manufacturing artisans (two to three from selected zone of KVIC) for conducting the trial of selected power tools.
  - iii. to identify the difficulties after using the power tools for furniture manufacturing.
  - iv. to support with optimized programme on “furniture manufacturing” to the Directorate of RENTI, KVIC, Mumbai to serve and support on PAN India.
  - v. to provide a new path to each stockholder of wooden furniture manufacturing sector.
3. **Justification for the project based on the assessment of the existing resources and infrastructure** –

### **3.1. Opportunity Evolving in Wooden Furniture Sector**

According to [www.entrepreneurindia.co](http://www.entrepreneurindia.co) the Indian woodworking industry is one of the quickest-growing sectors contributing to the growth of India's economy. India has about 1,00,000 listed existing woodworking units, and overseas 2,00,000 artisans are employed in these industrial units. Over 3,000 furniture business units in the prearranged sector have been industrialized in India and the numbers are cumulative every year. According to a study by the World Bank, India's organized furniture industry will keep mounting at 20% annually. India positions at 14<sup>th</sup> position in the world furniture market. Also, it is one of the fastest-growing industries in India.

India's online furniture retail market is expected to reach about Rs 15,000 crore in three years, from about Rs 750 crore now, according to industry estimates. With an estimated 25 per cent growth in supply of new residential and commercial real estate in the country for the next few years, the total furniture market is expected to grow to \$32 billion, as per sector estimates.

The different studies regarding carpentry artisans reported that despite the wide range of opportunities, artisans involved in making of furniture remain socially isolated because of the lack of upliftment of artisans. Hand tools should be improved because the work efficiency of the crafts depends on tools. The production process can be made easy using improved tools and advanced machines, providing and increasing extra leverage for artisans. It also suggested that the carpentry artisans belonged to poor backgrounds with low education levels, which created a long distance between artisans and modern technology.

### **3.2. Status of Indian Wooden Furniture Making Artisans**

During the visit of different rural area, it was observed that the design of wooden furniture needs to be updated, the finishing could be better, and furniture is very costly as compared to the furniture of the organized sector because of this, they are not getting enough demand.

Accordingly, the Department of RC&E, MGIRI, has systematically studied the "Need for appropriate tools and machines for making of wooden furniture" through the video-conferencing. In the video-conferencing, institutes specialized in wooden furniture designing and manufacturing, like the Institute of Wood Science and Technology,

Bangalore, Bhartiya Skill Development University, Jaipur, ex-KVIC officials, NGOs working on the concerned field, artisans from different parts of the country and enterprises who are making furniture participated.

During the video-conferencing following points were identified -

- The traditional wooden furniture-making, artisans need a set of appropriate power tools and systematic training on using the selected power tools because the market is flooded with tools that are completely out of reach of Indian carpentry artisans.
- MGIRI could select the set of most appropriate power tools, and systematic training for using for appropriate benefits could be framed.
- On an experimental basis, MGIRI will identify most appropriate power tools with the help of specialized training institutes.
- To finalize a set of power tools, identify a few artisans and designers (Engineering graduates) from each zone of KVIC with the help of the respective State Offices/Zones of KVIC for experimentation.
- Bhartiya Skill Development University, Jaipur, would provide all types of hand-holding support on a cost basis.

Therefore, the Dept of Rural Craft & Engineering, MGIRI, Wardha, has decided to conduct few experiments with artisans and designers involved in manufacturing of wooden furniture. Organizations in India have yet to work with the carpentry artisans involved in manufacturing of wooden furniture.

#### **4. The availability of proposed technology/intervention in the field/market etc.**

MGIRI will test and choose the most suitable set of power tools with the active coordination of Bharatiya Skill Development University, Jaipur. Once the initial selection is made, MGIRI will organize a two-month experiment with the help of master craftsmen to evaluate how easily these power tools can be used to craft superior furniture designs. Two to three artisans from each region will be chosen to participate in the experimentation, attending the training cum experiment sessions in Jaipur over the two months.

#### **5. Level of work done so far (Review of Literature)-**

##### **5.1. Status of Indian Rural Wood Craft Artisans**

Verma, & Gupta, (2019), reported that the woodcraft manufacturing skills and techniques are generally passed from father to son and then to grandson and so on. In the traditional system, the son is trained at the hands of the father right from his childhood.

The majority of the carpentry artisans have preferred woodcraft as a source for livelihood. They were forced to take up the family responsibilities at a young age due to dire financial conditions. Therefore, in order to earn their living, they decided to choose woodcraft as their profession. As a large majority of these artisans came from a deprived and very poor social class, they had no other option but to work very hard due to insufficient educational qualification and responsibilities of large families. They are from poor social and economic background and are less educated, thereby suffering from a huge gap between themselves and modern technology.

The government needs to make better resources available to the artisans such as health and wellness facilities, social security, local resources and solutions, women empowerment, etc., so that they can attain their due recognition and respect, both at the national and international level. This will result in the uplifting of their socio-economic standing in the society.

Verma, A. & Gupta, I. (2019), Saharanpur's Heritage of Woodcraft: Prototyping a Future, Journal of Heritage Management 4(1) 36–72, 2019 © 2019 The Centre for Heritage Management, Ahmedabad University and SAGE Publications.

### **5.2. Present Status of Indian Rural Wooden Furniture Sector**

Verma, & Gupta, 2017 reported the Indian wooden furniture sector is undergoing a radical change and facing enormous pressure to revive and modernize. Gradually, wood furniture which have long historical past are almost on the verge of vanishing due to globalization. Industrialization has badly affected wooden furniture sector of India. Availability of cheap replicated mass-produced products from organized sector in less time as per the changing needs of consumer trends is the biggest threat to the Indian wooden craft sector. This has also negatively impacted livelihoods of the wood crafts persons. On the contrary, artisans are known as creators and preservers of culture, but unfortunately in today's world they are one of the most deprived groups in society.

### **5.3. Recommendation for Revival of Rural Wooden Furniture Sector**

Verma, & Gupta, recommended the following –

1. Awareness programmes such as short-term courses, brainstorming workshops, seminars based on craft innovation, furniture designing, and design study should be organized by the Government of India to train the artisans to use new technology wherever possible in an attempt to make quality products using innovative opportunities.
2. There should be training centers with diverse fields for the training of the artisans that would educate them about the basic training of computers, online trading, certification, and exposure to new initiatives and also the government's policies.
3. Hand tools should be improved because the work efficiency of the crafts depends on tools. The production process can be made easy using improved tools and advanced machines, which can provide and increase the extra leverage to the artisans.
4. Designers' input can be added to improve the product line, which can open new doors for the wood carving craft to come out of its restricted technique of designing, which will develop a unique and contemporary look.
5. Woodcraft education courses should be introduced in secondary schools and the Department of Arts and Design, which will connect the young generation with their culture, tradition, and heritage.

Verma A and Gupta I, (2017) A study on working condition of artisans in Saharanpur wood craft industry. J Art Arch Stud. 6 (1): 12-17.

### **5.4. The Revolution of Carpentry Power Tools**

The use of power tools has revolutionized the woodworking and carpentry industries, making work with wood simpler, more interesting, and more productive. In the past, carpenters and craftsmen used to tackle woodworking projects with more simple hand tools.

Then, more and more advanced carpentry power tools were created over time. Choosing the best power tools for carpentry, however, might be difficult given the wide variety of options available.

### **5.5. Types of Power Tools for Woodworking (Carpentry)**

Wood-working tools such as hand tools, power tools, and wood-working machines are tools that are used to shape and manipulate wood. Wood-working tools can range from basic hand tools to complex machines, depending on the level of expertise and the nature of the wood-working project. The wood-working tools market is a diverse and growing industry that provides tools and equipment for professional wood-workers. The market offers a wide selection of instruments, from simple hand tools to sophisticated power tools and equipment. Innovative and environmentally friendly items like cordless and battery-powered tools are also becoming more popular on the market, while digital technology like computer-aided design (CAD) software and CNC machines are becoming more widely used.

**The woodworking tools market is driven by growing demand for general and customized furniture coupled with the rise in use and advancement of technology.**

- **Demand for sophisticated woodworking equipment** is rising as consumers become more interested in custom and one-of-a-kind wood creations. This pattern may be seen most clearly in the domestic woodworking market, where DIY enthusiasts are using wood-working equipment to make unique furniture and home accents.

## **6. Relevance, usefulness, and justifications of the proposed work to the KVI sector in terms of economy, efficiency, productivity, quality, raw material utilization, etc.:**

According to different studies, the Indian wooden furniture-making industry is one of the quickest-growing sectors contributing to the growth of India's economy. But the rural artisans are poor and not supported by technologies.

The Directorate of RENTI, KVIC Mumbai, runs the programme to support wood and metal craft artisans in rural areas. The waste-wood-craft, turn-wood-craft, wooden toy-making programmes of the Directorate of RENTI, KVIC, Mumbai, were framed based on the experiments conducted and results achieved at Dept of RC&E, MGIRI.

Now, MGIRI will finalize the set of most appropriate power tools for artisans involved in manufacturing of wooden furniture and Directorate of RENTI, KVIC, Mumbai will support the furniture making artisans with the help of set of most appropriate power tools and systematic training.

The success of this programmes will open new employment opportunities for carpentry artisans like the Kumbhar Sasaktikaran programme because carpentry artisans, are the second largest artisan community after Kumbhar.

**7. Schedule (month-wise Action Plan) for implementing the project:**

S No	Activity	Qrt 1	Qrt 2	Qrt 3	Qrt 4	Qrt 5	Qrt 6	Qrt 7	Qrt 8
1	Identification of participants								
2	Visit to Bharatiya Skill Development University Jaipur to finalized the set of power tools								
3	Signing of MoU with Bharatiya Skill Development University Jaipur								
4	Purchase of selected set of Power Tools								
5	Experimentation with power-tools with the help of artisans at Bharatiya Skill Development University Jaipur								
6	Study of Techno-economic status of artisans.								
7	Submission of final report with appropriate recommendations for composition of new programme of Directorate of RENTI								

**8. Implementation methodology in brief (stepwise) –**

- The artisans of wooden furniture making will be selected with the help of State Office and, MDTC, KVIC. Only those artisans will be selected those who are making wooden furniture at their own home and atleast matric pass.
- MGIRI will finalized the most appropriate power tools with the help of Bharatiya Skill Development University Jaipur.
- After that, MGIRI will finalize the specifications of the appropriate set of power tools selected by a group of experts from both institutes will be purchased through Bharatiya Skill Development University Jaipur.
- Two-month experimentations on power tools for making of wooden furniture with the help of selected artisans will be organized at Bharatiya Skill Development University Jaipur.
- At the beginning of experimentation, the Bharatiya Skill Development University Jaipur will issue the power tools to the participants for practical experimental work and after successful completion of experiment these power tools will be issued on permanent basis to all successful participants.
- After completing the experiment, they will be requested to start their work immediately at their home/shop. At the beginning of every quarter, they will telephonically contact to update their achievements and difficulties to the Project Coordinators of MGIRI. If require after a time span of two years MGIRI will conduct Techno-economic study of successful artisans on following parameters –

- a. Modernization of product after intervention
  - b. Production rate
  - c. Production time
  - d. Fatigue in terms of workload and working conditions.
  - e. Reduction in production cost
  - f. Increase in income.
- MGIRI will compose an appropriate programme and submit recommendations based on the study's outcome to Directorate of RENTI, KVIC.
9. **Potential areas identified for promotion of micro-enterprises** – The artisans those who are involved in making of wooden furniture will be potential customers for this type of programme. The revival of this sector will promote enormous new job opportunities for artisans involved in making of wooden furniture. PM Vishwakarma Yojana could adopt this recommendation.
10. **Scientific and Technical interventions envisaged.** – MGIRI will identify the most appropriate power tools for making of designer furniture and customize the skill development training programme for the artisans of wooden furniture. Revival of this sector will give enormous new job opportunities in rural and urban areas.
11. **Training programme envisaged** – The Directorate of RENTI could arrange training for artisans at the field level with the help of artisans involved in the experiment.
12. **Linkages envisaged:** - KVIC will help to identify the Master craftsman/artisans from different zones who are working in the field making of wooden furniture. Also, technological intervention of Bharatiya Skill Development University Jaipur will be involved.
13. **Follow-up Mechanism envisaged tapping the fullest benefit of R&D.** - For effective communication, will form a group of artisans working in the same field.
- After completing the experiment on power tools, they will be requested to start their work immediately at their home/shop.
  - At the beginning of every quarter, the beneficiaries will contact telephonically, to update their achievements and difficulties to MGIRI.
  - After revival of furniture making business of artisans a techno-economical study will be conducted.
  - MGIRI will compose an appropriate programme and submit recommendations based on the study's outcome to KVIC.
- 1) **Expected outcome of the project:** The following outcomes are expected from this project-
- The production cost of wooden furniture will be minimized and new contemporary designs on furniture will be visible.
  - Youth of carpenter family will come forward to take wooden furniture making as a carrier/business as like pottery.
  - Master trainer will be developed at field level to conduct the training programmes for other carpentry artisans.

#### **14. Exit Strategy (Plan after completion of the project) -**

- After completing the first phase of experiment with artisan, KVIC may arrange training programme for designers and master craftsperson from every region of each state at Bharatiya Skill Development University Jaipur.
- New mission projects for the artisans of wooden furniture like Kumbhar Sasaktikarn Programme can be composed.

## 15. Budget Summary

SN	Details	Rate, Rs	Quantity, Nos	Total Amount Rs
1	Travelling Allowances (TA & DA) to the Master-craftsman equivalent to sleeper class	6000	10	60,000
2	Expense for two-month experimentation with artisan at BSDU, Jaipur	40,000	10	4,00,000
3	Food and Accommodation for artisans for two months	11000	10	1,10,000
4	Set of Power-tools and other essential tools finalized during experimentation	55,000	10	5,50,000
5	Travel of MGIRI Officers			2,50,000
6	Expenses for advertisements			1,00,000
7	Miscellaneous expenses			30,000
			Total	15,00,000

**Note – If cost of training will increase then the number of trainees will be reduced to adjust entire programme within the budget. Also, as needed, the fund will be used from one head to another.**

16. Certificate of Endorsement from the head of the institution should be in the prescribed format. (Annexure -III.).
17. Submission of Progress Report: A various activities carried out under this project is required to be submitted quarterly and also annually along with the data, summary etc... in the prescribed formats (Annexure--IV)

Vinod Wankar  
Name & Signature of the  
Co-Project Coordinator

Date: 07/03/2024  
Place: Wardha

Recommendation of  
State Director/Divisional Director:

S. H. Shinde  
Name & Signature of the  
Project Coordinator

A. A. Murkute  
Name & Signature of the  
Head of the Institution/Agency/Office

Dr. A. A. Murkute  
Director, MGIRI, Wardha  
Signature  
State Director/Divisional Director

### ANNEXURE- III

(Ref : S.O. No. 1739, Dt:29.06.2015)

#### CERTIFICATE

#### ENDORSEMENT FROM THE HEAD OF THE INSTITUTION/OFFICE

1. We have gone through the terms and conditions of the S&T grant agreed to abide by and enter into an Agreement/MOU with OCKVI for implementing the S&T scheme.
2. We have neither obtained nor intended to obtain financial assistance from any other agencies, amounting to double funding.
3. We undertake to submit progress reports, statement(s) of accounts, utilization certificates, etc. as required.
4. Certified that **Dr. S P Mishra** is the Project Coordinator of the proposed S&T Project. The Project Coordinator will assume the responsibility of completion of the project.
  - Certified that the hardware, other basic facilities and such other administrative support required as per terms and conditions of the grant, will be extended to the Coordinator(s) throughout the duration of the project.
  - Our agency assumes to undertake the complete financial and other management responsibilities of the project, and will ensure compliance with the terms and conditions laid down.
5. Certified that the Society/Organization will extend benefits of the said S&T projects to the targeted beneficiaries of KVI activities only.
6. If any of the above statements found to be incorrect by the OCKVI at any point of time, the organization takes the responsibility to refund the entire amount released by OCKVI along with 10% interest as per GFR norms.

Date : 07/03/2024

Place : Wardha

  
Name & Signature of the  
Head of Agency/Office

डॉ. आ. अ. मुरकुटे  
निदेशक, एमगिरी, वर्धा.  
Dr. A. A. Murkute  
Director, MGIRI, Wardha