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WORKING GROUP No.8

**APPROPRIATE TECHNOLOGY
FOR LIGHT ENGINEERING INDUSTRIES
AND RURAL WORKSHOPS**
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{ PROPOSAL FOR STARTING CARPENTRY UNITS IN RURAL AREAS .
Background Paper ,

PROPOSAL FOR STARTING CARPENTRY UNITS
IN RURAL AREAS

by

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(ATDA), Lucknow

* This paper was prepared by R. N. Kapoor on behalf of ATDA.

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I N T R O D U C T I O N

Village artisans have sustained the village economy for ages. The blacksmiths, potters, shoe-makers, etc., have not only catered to the needs of the countryside for centuries, but have also produced surplus which was exported to towns and cities and even outside the country. But somehow now-a-days they are not able to produce new kinds of products required by the present-day society. They are not able to stand in competition with the modern workshops and their technology and methodology of production and organization. This phenomenon has endangered their very existence and has resulted in large-scale unemployment in the countryside. It would be a sad day, indeed, for the country, if all these ancient village craft and industry goes into oblivion. It would be difficult to revive and rehabilitate them in rural areas if these skilled and professional people become extinct due to the onslaught of modern industries. This trend may be due to lack of proper technology available to these craftsmen and also due to the absence of an infrastructure, which are important prerequisites for any industrial production now-a-days. These shortcomings can be overcome in two ways. Firstly, by providing a centralised work-place where proper technology and organisational pattern with machines, equipments, tools, and facilities for the design of products and marketing, etc. are built up and artisans are made to work on piece-rate wages to produce articles of required market acceptability in these centres. The infrastructure like building, equipment, etc. will have to be provided by the agencies building the centralised work places. The second method could be to extend the appropriate technology with minimum essential equipment directly to the cottages of the artisans to enable them to work in their own

homes and build up their workshop. The infrastructure in this case will have to be provided initially by some development agencies and later on a local entrepreneur can take it up.

The Allahabad Polytechnic has done commendable work as far as the first method is concerned. For the last few years, they have established a central workplace within their own premises and gave opportunity to the artisans to work there. In actual field conditions, this experiment has proved successful. Now Allahabad Polytechnic are extending this experiment directly to the rural areas installing central workplace with infrastructure facilities to some of the villages near Allahabad. This study is based on their experience and has been named as 'rural artisan complex'.

The Appropriate Technology Development Association prefers the second method for taking the improved workshop to the cottage of the artisans concerned because it makes them more independent. However, the Association also have a great appreciation for the work done by Allahabad Polytechnic to revive these crafts in their own premises and villages. To introduce the second method requires much more hard work and more inputs are needed to make it successful. The Association has, therefore, decided to support the experiment of the Allahabad Polytechnic in the initial stages and to help in establishment of the Central Workshop in the villages near Allahabad to make a success of this experiment. Subsequently, the Association will take up the work to select suitable products and design of new products for cottage production in close collaboration with the Allahabadi Polytechnic.

BACKGROUND AND NEED

In the last few centuries benefits of Science and Technology have been experienced largely in urban areas and the traditional crafts in villages have little impact of scientific progress. On the other hand, they experienced a set back and the traditional artisans gradually left their trades and passed on to either new occupations or became partially or fully unemployed.

Carpentry and wood working has also like other trades experienced a set back. The old monumental wood work and sophisticated designs are hardly demanded any more in rural areas and with the advent of time competent carpenters capable of delivering such goods have also become extinct. Carpentry and wood working was an age old art in rural communities. As man emerged from cave-era, one of the handiest items of his daily use were made out of wood which was in abundance all around. Since then with the march of civilisation wood became one of the principle raw material supporting community living as a building material, as material for fabricating vehicles of various sorts and also for artifacts for daily living, like furnitures, doors, chowkhats, purlins etc. It was very natural for wood working and carpentry skill to become as one of the most important and developed craft in the society. Gradually with the advent of high strength and durable iron and steel, wood as a principle raw material suffered a set back but more on account of industrial revolution which created pockets of concentrated and mechanised systems of production in urban settlements. Thus carpenters, who had for ages developed fine skills of wood working including fancy carving and engraving on traditional wood-ware and furnitures, faced a dwindling local market in the rural areas. Mechanised production not only created problem in getting quality raw materials but also tempted local artisans to migrate to urban centres in search of jobs. Rural communities thus became gradually extinct of such a valuable craft which was a vital one amongst those which made the community self-supporting. Withering of this craft made adverse impact on rural economy in several ways.

1. Traditional skills developed over ages through families of carpenters gradually withered.
2. Carpenters started facing grave economic hardship in sustaining their trade in rural-areas and as a consequent took-up jobs in urban areas.
3. Local needs of villagers were not adequately met with. As a result their inconvenience of depending on city shops for the articles of their domestic and agricultural needs and even for repairs etc., increased day by day.

It will be therefore of prime importance, in view of socio-economic development of rural-areas, to revive the craft of carpentry and wood working and to strengthen it adequately through appropriate economic and technological infrastructure.

MEASURES PROPOSED

Since skilled, semi-skilled and unskilled manpower is in abundance in villages, effort should be made to start centralised village carpentry units to serve as nucleus for development of this trade. These units given some reasonable techno-economic base will become self-supporting preferably on cooperative basis and can be made to diffuse the skills and know-how to artisans living in the adjoining hinterland. In the second stage these centres can take-up the work of starting a chain of smaller decentralised units of production serving the rural population over a larger area. Central units will have following objectives.

- Ist Phase** :
1. To serve as a central pilot unit in rural area.
 2. To take-up design, development and production of articles of wood for rural requirements.
 3. To serve as a basic organisation for trade and technology.
- IInd Phase** :
1. In addition to the above, to provide training to young entrepreneurs selected from the adjoining villages belonging

preferably from families of carpenters.

2. To provide a seed-money of Rs.1,000/- to each of the trained entrepreneur so that he may buy the basic hand tools and equipments and renovate his work place for starting a cottage level carpentry unit in his village.
3. To provide raw materials to the trained entrepreneurs and buy their finished goods for marketing.
4. To provide follow-up facilities for the entrepreneurs particularly regarding technical know-how and product design-improvement etc.

A CASE HISTORY:

In the context of the foregoing the growth of Carpentry Section in the Production-Cum-Training Centre of Allahabad Polytechnic provides an interesting case history. Allahabad Polytechnic one of the biggest technicians training centre of its kind in the country has a huge requirement of furniture and wooden items which were in the routine way being met by local city market. Owing to rising cost of such items specially not commensurating with their quality and due other uncertainties, the polytechnic started in 1971-72 on a modest scale its own production-cum-training unit in carpentry trade initially to meet the institutional requirement. Because of the fact that the technical institutions have skilled workers and supervisors in several trades, the polytechnic achieved immediate success in satisfactorily meeting its own needs for furnitures etc. Gradually a few job-orders, procured for outside work, were also executed and the result was that customers could immediately recognise the assuredness in quality and modernity of the items made in this production unit. The result was like chain reaction. The number of job-orders steadily increased in quantity and variety. Residential, industrial and office furniture and wooden furnishings of other sorts started being designed, developed and supplied on a large scale, leading ultimately to the establishment of one of the biggest and most modernised Carpentry Unit of the northern region. It now has a

highly specialised sub-unit which caters to the production of know-how and a furniture of export quality.

This experiment was next extended to rural setting when Allahabad Polytechnic started about 2 years back its '15-village Integrated Area Development Plan'. Development of cottage industries and up-gradation of local skills is a vital component of this plan. The carpentry unit has started an extension centre in one of the villages in the project area and is also providing training to local entrepreneurs in this trade, with the ultimate aim to enable them for self-employment in the villages. This entrepreneurs will be linked with the Village Extension Centre which will provide them the technical know-how and facility of suitable raw materials and marketing of the finished goods. This centre has already provided benefit of such a scheme to local carpenters for upgrading their skills and providing financial and organisational support. Even locally local markets have been started which provide a ready and convenient outlet for the village goods at the doorstep of the village community thus aiding gradually to reduce their dependence on urban areas to a minimum and make them self-sustaining.

The attached scheme gives the detail of the Village Carpentry Unit being set up in rural areas to meet the local needs and upgrade the craft of artisans living close by and in the course it will act as hub for radiating and sustaining techno-economic development over a large area around it. Decentralised units at the level of artisans will directly be set up and the responsibility of sales and raw material procurement and procurement of designs etc. would be at village Carpentry Unit which in turn take advice of Allahabad Polytechnic Carpentry Unit and the Polytechnic will multiply such centres in every State Panchayat i.e. 12 to 15 villages. This concept of starting a chain of small decentralised craft units in villages is philosophically in agreement with line of thinking of the Appropriate Technology Development Association of India also and the latter have also assured to join hands in such a venture.

FINANCIAL STATEMENT

1. Working Capital	Rs. 2,00,000/-
2. Fixed Assets	Rs. 5,40,000/-
	<u>Rs. 7,40,000/-</u>

Revolving Fund as seed-money to entrepreneurs. Rs. 1,00,000/-

FINANCIAL REQUIREMENTS

<u>A - Building (Including land etc.) :</u>	<u>Amount in Rs.</u>
(1) Land 1 acre	10,000/-
(2) Building	1,00,000/-
(3) Electrification etc.	20,000/-
(4) Water Supply including storage tank	20,000/-
	<u>1,50,000/-</u>

B - Machinery and Equipment:

1. Dimension Saw	35,000/-
2. Thicknesser 18"	22,000/-
3. Belt Sander	24,000/-
4. Surface 18"	20,000/-
5. Circular Saw	12,000/-
6. Spindle moulder with Tapping attachment	20,000/-
7. Machine Dovetail Box Board with router	40,000/-
8. Band Saw	35,000/-
9. Drilling-Cum-Taping machine	14,000/-
10. Wood working Lathe	10,000/-
11. Boring machine	3,500/-
12. Wood Seasoning Plant	1,00,000/-
13. Boiler	20,000/-
	<u>3,55,500/-</u>

Add: 10 o/o installation and charges:

35,500/-

Rs. 3,90,000/-

C. OFFICE EQUIPMENT

1. Typewriter, Cup-boards, Chairs, racks etc.	10,000/-
2. Storage Cabinets etc.	5,000/-
	<u>15,000/-</u>

FIXED ASSETS:

1. Building (Including land etc.)	1,50,000/-
2. Machinery and Equipment	3,90,000/-
3. Office equipment	15,000/-
	<u>Rs. 5,55,000/-</u>

Amount in Rs.

D. Raw Materials such as timber, glass, sunmica, plywood etc. per month	40,000/-
E. <u>Salary and Wages</u>	<u>Total Salary Rs.</u>
1. Manager	1,500/-
2. Foreman	700/-
3. Charge hand 2 Nos. 500/- each.	1,000/-
4. Sales Officer	700/-
5. Account Officer	700/-
6. Stenographer	500/-
7. Office Asstt. 3 Nos. at 350/- each	1,050/-
8. Sr. Technician 5 Nos. at 450/- each	2,250/-
9. Technician 10 Nos. at 400/- each	4,000/-
10. Jr. Technician 20 Nos. at 300/- each	6,000/-
11. Helper at 100/- 10 Nos.	1,000/-
12. 1 gardener, 1 night guard, 1 messenger each at 200/-	<u>800/-</u>
	<u>Rs. 20,200/-</u>

F. Contingencies (Per month)

1. Power, Water, Postage, Stationery, conveyance, phones etc.	8,000/-
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G. Working Capital (for 3 months)

1. Raw Materials 40,000 x 3	1,20,000/-
2. Salaries and Wages 19,200 x 3	57,600/-
3. Contingencies 8,000/- x 3	<u>24,000</u>
	Rs. 2,01,600/-

Say Rs. 2,02,000/-

H. Capital Investments

1. Fixed Assets	5,55,000/-
2. Working Capital	<u>2,02,000/-</u>
	<u>Rs. 7,57,000/-</u>

Amount in Rs.

I. Profitability Analysis (on Annual Basis)

Cost of Production (Annual):

1. Raw Materials	4,80,000/-
2. Salaries and Wages	2,42,400/-
3. Contingencies	96,000/-
4. Depreciation on buildings at 5 o/o per annum	7,000/-
5. Depreciation on Machinery equipment at 10 o/o per annum	40,000/-
6. Interest on capital investment at 10 o/o	<u>74,600/-</u>

Total: Rs. 9,40,000/-

Say: Rs. 9,40,000/-
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J. Number of Workers/Staff:

Male	:	50
Female	:	<u>9</u>
Total	:	<u>59</u>

In view of the prevailing market rates for wooden items and also the demand and supply position in the project area, it is expected that average profit will be of the order of 20 o/o of the cost of production.

Hence annual profit : Rs. 1,88,000/-
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LIST OF SUPPLIERS OF CARPENTRY AND JOINING
MACHINERY AND EQUIPMENT

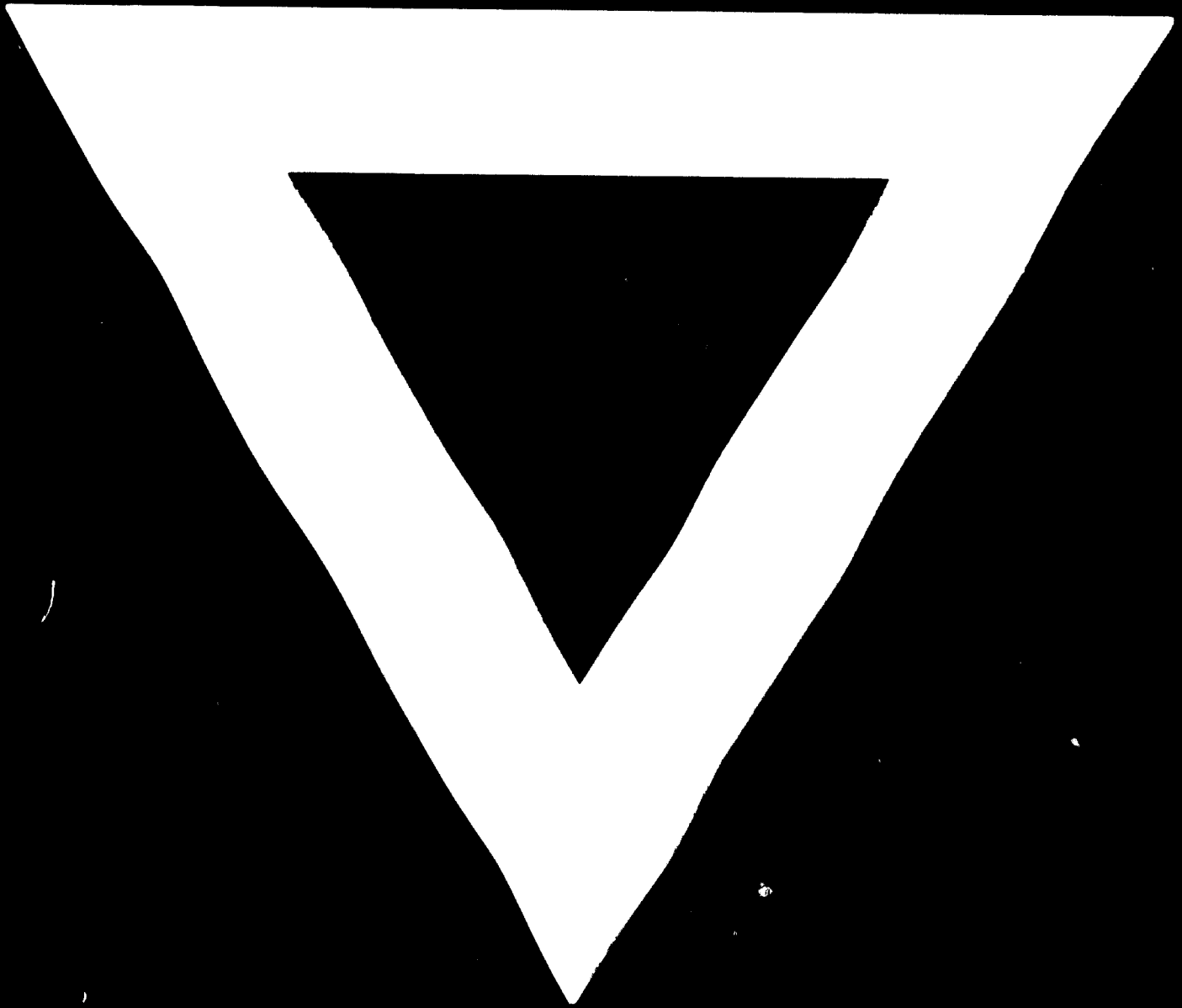
1. M/s. Sandeep Sales Corporation,
Civil Lines,
Lucknow.

2. M/s. Perfect Machine Tools Co. Pvt. Ltd.,
Bell Building,
Sir Feroj Shah Mehta Road,

3. M/s. Asw Hickson Ltd.,
7A, Elgin Road,
Calcutta - 700020-

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