

Pre-Feasibility Study

WOOD-BASED COTTAGE INDUSTRY IN KURRAM AGENCY

Household Furniture, Crates, Shuttering Materials etc.

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4. **EXECUTIVE SUMMARY: -**

Kurram Agency had a population of 4,48,310 as per census of 1998 with an intercensal percentage increase of 52.4 since March 1981 when it was 2,94,362 souls. The annual average growth rate remained 2.5% during this period. The total area of agency is 3,380 square km that gives population density of 133 per square km as against 87 souls observed in 1981, indicating a fast rise in growth rate of population of the agency. According to a safe estimate the population has now reached to 5,30,000, plummeting density further to 156 persons per square km. Only 5.6 % population is living in urban area of Sadda and Parachnar, the remaining in rural area.

The entire socio-economic life of the multitude of the population depends on agriculture and agro-forestry some how or the other. Wood has underpinned their life in the form of staple inputs as firewood, timber and fodder. In addition to own resources afghan fire and timber wood find its way to Kurram in bulk form. Keeping their home's temperature bearable in winter as well as kitchen consumption of the spawning population both ends have made them consuming firewood in profusion. This sharp need is eating up not only fuel-wood flooding from Afghanistan but also devouring local supply of multi-purpose wood. This intense need has cancelled out the use of wood for any other purpose except firewood. Estimably average household consumes 300 maund firewood in a year, and in some cases even more.

Kurram agency is circumscribed in the problems triumvirate i.e., depletion of NRM, threat of wood shortage and poverty manifested in various forms. On the other, immense productive potential exists for natural resource replenishment due to widespread waste and abandoned land suitable for the only use of farm forestry. In order to catch up with the short-lived depleting stock of wood resources on the one hand and burgeoning local demand of the rising souls, has provided sound footings for sustainable intervention in NRM sector activities. FFP of SDC has stepped in the nursery raising making it as profitable enterprise through community participation. There is a need to work further on other aspects of the issue. It seems very plausible to contain the NRM issue both on demand as well as supply side of the forest economics. Developing Wood-based Cottage Industry is one well-thought step in this direction.

Attempt has been made to conceive and translate the subject in most possible common parlance by employing symbology and terminology commonplace. Though the basic

principles of resource analysis whether forestry or non-forestry remains the same.

PRE-FEASIBILITY

SITUATIONAL ANALYSIS:-

Overview.

Unique features of Kurram Agency.

The economy of the Agency economy is pre-dominantly based on agriculture followed by agro-forestry. The interest of people in trees growing is distinguishing than other parts of the province. The element of availability of vast waste and abandoned land downstream the water- shed galore is providing legitimate ground for Farm forestry vis-à-vis drought-hit depleting agriculture. The recent drought has further spewed abundant land for farm forestry-related activity. The lowest opportunity cost of agricultural pursuits in such areas has considerably made Farm forestry as the best viable economic alternative.

The need for food and fuel go hand to hand as the need intensity of fuel-wood is not less than food for the locals. Border trade and employment in Middle East has sagging statistics therefore development and rehabilitation of NRM actives has immense potential as alternative economic activity here.

Interestingly there are least big landlords whereas almost all households have their personal land holding. The 90 % of the landholdings' size ranges between 16 to 50 kanals. However due to its special topography the FR household has little different phenomenon due to rugged hilly area. There is little such holdings for regular agriculture.

The societal complexion is multiethnic however predominantly Muslims. Religious ethnicity provides base for social interaction and mobility. Kurram agency is divided by unseen boundaries of Sunni and Shia. However experiences of the past have made them realized to be tolerant and accommodating. An environment of fraternity and social cohesion is fast spreading that is encouraging. Joint economic interests are raising the people above sectarianism. Ethnic Puritanism is giving way to open, gernerous and forward looking civilization. It is tribal society having strong norms and rich cultural heritage. There are

more than one dozen tribes living in this area important are Turi, Bangash, Para Chamkani, Jaji, Khoshi, Mangal, Orakzai, Masozai and Afridi are to mention. Kurram agency due to its geographical reasons is quite sensitive. Political Agent controls the administrative and development matters. FC and Kurram Levi are the law enforcing authorities. The traditional Jirga system, as well as Rafakai, Maliks and Mullahs are important social institutions. . Jirga system, due to its inherent need, still has strong social acceptance that provides strong element for social inter-dependence and community organization spirit.

Population Complexion;-

Kurram Agency had a population of 4,48,310 as per census of 1998 with an intercensal percentage increase of 52.4 since March 1981 when it was 2,94,362 souls. The annual average growth rate remained 2.5% during this period. The total area of agency is 3,380 square km that gives population density of 133 per square km as against 87 souls observed in 1981 indicating a fast rise in growth rate of population of the agency. According to a safe estimate the population has now reached to 5,30,000, plummeting density to 156 persons per square km. Only 5.6 % population is living in urban area of Sadda and Parachinar, the remaining in rural area.

Less exposure to development projects:-

Except government ADP no significant development activity has been undertaken in the agency on sustainable basis. USAID was first of its kind worked here mostly on irrigation. UNDP worked on conservation but focused mostly on Mazri resource up gradation. SAP worked on infrastructure and Education and was first that worked directly with community and did some community organization however all such pursuits did not paid much for want of program sustainability. In last few years a number of projects have started their activities here. SPDP is such one project that is working on sustainable agriculture with local community for land leveling and fruit and forest tree promotion. Currently it is working in leased community plots in upper Kurram. Kurram agency is one of the three regions where FFP is being implemented.

Kurram agency is being surrounded by castle walls of gentle and steep hills reaching up to 4400 meters elevation. The central valley is consisting irrigated and un-irrigated planes.

The Kurram planes are dissected by the Kurram river which enable 46% of the total arable land for cultivation . Where as deforestation on the slopes causes the soil erosion and increases the sediment in the Kurram River.

Literacy rate for both men and women is below 20 % while 33 % male and 4 % female are literate. The women of Kurram Agency are traditionally bound to household activities and face restricted mobility that shows the low literacy rate among women.

Most of the people living in dry remote and difficult to access areas are the poorest and mainly depend on agriculture. In Kurram farming cum livestock rearing occupies about 70 percent of the population, however farm sizes and the farms are fragmented. The other important but less organized cottage industry currently is the production of rope, baskets and mats from the Mazri plants. Sericulture was once an important cottage industry but it has been in decline for several years. . Transportation, timber and trade are other major occupations. Some people have migrated temporarily to other bigger cities of Pakistan or Gulf States for economic reasons.

Climate:-

Unique climatic and environmental conditions prevail in the Kurram Agency, further diversified in the three sub-regions. The annual mean temperature of maximum is 21.1 and minimum 9.5. however it goes to minus 1.6 and minus 0.6 in January and February respectively. Heat never crosses 30.6 degree in summer. This provide overall congenial environment for tree growth.

Land use Statistics:-

The total area of the agency is 3,38,052 hectares. 12,701 hectares is under forest. Wasteland is 1,200 hectares while 3,18,942 are uncultivated while further. 3,05,041 are not available for cultivation. The drought spell of the recent last three years has further rendered 2,700 hectares abandoned land. The same is on the rise due to unfavorable climate.

Investment Potential: -

There is vast industrial base for wood-based cottage industry in Kurram agency that remained untapped for a number of reasons. Though it can be held still in a rudimentary stage and, therefore, would be appropriate to promote wood-based cottage industry allowing it to play its due economic role. Due to the agrarian cum forest nature of the agency economy, potential for developing agro-forest-based industry is there that is looking for to be explored and exploited. It has better chances of success. It would, therefore, be desirable to set up industries based on local wood raw materials to cater present as well as future, motivate local as well as outside demand from indigenous fast growing species. In general such activities would relate to high value-added and low volume items such as household items of daily use. However, while selecting such articles their comparative success prospects with respect to market viability and extent of benefits to local people would need to be examined carefully.

The chances of capital intensive industries are not very bright here, due to shyness of capital, market limitations and wood producer conservatism that have sheathed the competitive advantage of the area. The situation demands setting up of labour- intensive and low capital cottage industry particularly as the Agency is facing the problem of growing unemployment. The existence of favorable wood economy, availability of cheap inputs, extent of likely demand, resource efficiency, special local characteristics, all provide congenial atmosphere for wood-based cottage industry that forebear prolific chances of success.

Local Raw Material-Based Industrial potential (general): -

The economy of Agency is primarily agrarian. However, agro-based industrial units are conspicuous by their absence.

The specific products that show immediate promise for development are local wood species that grow abundantly in various part of the Agency. Vast landscapes of wasteland and abandoned lands around unfit for agriculture pursuits, accentuated further by recent drought, un-economical agricultural returns from arid and rain-fed landholding has potential alternative use for drought resistant rapid growing local species.

Presently, timber of such species has limited market for value-added use therefore the major

chunk of such wood find its way to fireplace being it not a part of local non-fuel consumption. Consequently, there is often distress sale of such wood, especially in the face of bumper Afghan timber and fuel wood import. It is, therefore, essential to explore its more productive use and stop lavish abuse by finding proper place for its optimum utilization. The locally available wood can be used in various low-end, middle-end as well as high-end products. The industrial opportunities emerging from wood- production can be the following products in general:

- Ψ Panel doors, flush doors, windows, ceiling logging.
- Ψ Households furniture.
- Ψ Household wood pottery & cutlery.
- Ψ Office-used items.
- Ψ Charpai logs and legs.
- Ψ Parquet flooring (wooden flooring tiles)
- Ψ Boards, particleboard, batten board
- Ψ Insulating board.
- Ψ Wooden electrical accessories.
- Ψ Agricultural implements.
- Ψ Handcrafted articles, thrash baskets and the woodcarving, miniature.
- Ψ Simple office tables and counters.
- Ψ Match splints, match boxes.
- Ψ Charcoal.
- Ψ Low-cost inputs of some plants for their medicinal and aromatic value.

Immense potential exists for household products. These raw material can also be converted to low volume and high value-added nature such as handcraft, pottery and cutlery, office-table articles, thrash baskets, woodcarving & miniature furniture to suit the taste of art lovers and the intricate design on them can depict the rich culture of the Kurrams. There is ready local market for such products as well as immense export potential for Peshawar, Kohat, Islamabad, Lahore etc.

There is good scope for small-scale wood seasoning and treatment plant in the Agency

once the market is developed. In the absence of seasoned wood, the quality of furniture making in particular and all wood-based construction in general gets impaired. Wood seasoning plants, are required to supply wood at least for export quality furniture making. Setting up of small capacity charcoal units for Afghan oak, a high-grade but cheap fuel wood, requires comparatively low capital investment for the progressive entrepreneurs. Entrepreneur can find Kurram tax-free zone for their competitive wood-based business.

Preferable wood-based products for the FFP wood-based cottage industry project at Kurram :-

The following products are specifically suited for the local wood in Kurram.

- ❖ Households furniture such as Panel doors, flush doors, windows, ceiling logging, bed, table, chairs etc.
- ❖ Household wood pottery & cutlery.
- ❖ Office-used items.
- ❖ Charpai logs and legs.
- ❖ Parquet flooring (wooden flooring tiles)
- ❖ Boards, particleboard, batten board, Insulating board.
- ❖ Wooden electrical accessories.
- ❖ Agricultural implements.
- ❖ Handcrafted and office table articles, thrash baskets and the woodcarving, miniature.

Wood-based cottage industry as sub-sector enterprise.

For knowing about the problem in its first leg a survey was conducted by taking 16 wood furniture manufacturing units covering almost all in upper and lower Kurram and two in FR. These samples are considered adequate representative of Upper & Lower Kurram as well as FR Kurram in view of their socio-economic profile.

Various ratios of the sub-Sector: - (per unit)

- | | |
|----------------------------------|-----------------------|
| ➤ Capital employed per unit. | =Rs. 0.130 million |
| ➤ Capital employed per employee. | =Rs. 0.032500 million |
| ➤ No. of employees per unit. | = 4 |

- Average per unit per month production capacity. =Rs. 0.165 million
- Average per unit actual production/month. =Rs. 0.047 million
- Average actual capacity utilization. =28.48 %
- Total actual sales per annum. =Rs .564000 million
- Total actual value addition per annum. =Rs. .265080 million
- Percentage of value addition. = 47 %
- Sale - Capital ratio. = 100: 23.05

The above statistics gives us encouraging picture of business potential in the sub-sector.

Problem findings:-

- ❑ The very common problem faced by the sub- sector (industry) is shortage of working capital.
- ❑ Only 3 % of the industry is involved in exporting manufactured furniture out of the agency, though potential exists for much more. The very first problem in this sector is shortage of working capital and latest technology as reflected by 86% of the census of this particular sub- sector.
- ❑ There is obvious local market saturation for high-end products that is dwarfing this industry locally both in qualitative and quantitative terms as reflected by 73% census of the sample.
- ❑ The sector has responded that there is normally no shortage of Raw material however it uses only 2-3 % wood of local fast growing specie.
- ❑ The units are working below the capacity. Training coupled with latest technology can almost triple their productivity altogether.

Product wise wood end-use by the sub-sector: -

Product	End-use
Household furniture.	(83%)
Office furniture.	(12%)
Wood shuttering material & Crates	(3%)
Agriculture implements.	(2%)

Discussion:-

- Ψ The reason they gave for lower production of office furniture is situation of local demand and no access to outside market.
- Ψ Most of the agriculture work is tractor-based that limited demand for agriculture implements.
- Ψ However potential for Wood shuttering material & Crates exists. However the price of local species does not compete with the prices of poplar wood imported from Mardan, Charsadda and Peshawar on cheaper price. The use of Ailanthus has not yet been discovered as substitute against imported poplar. Growing of poplar tree that has special stake in Shuttering material and creates in other parts of the province has one problem here. It attracts borer worms, probably due to low humidity (moisture) in the local atmosphere as some expert opined. The tree starts worming out after a stage as its moisture requirement increases as per its body size. The entrepreneurs seem inclined to substitute their need presently with the iron-sheet-made shuddle. However they use wood for the pole. Growing demand environment exists for the ailanthus that could not be promoted due to prevalence of non-innovative social milieu. Ailanthus is looked down upon for its free succors growth. Local community needs mobilization to rearrange their priority list as per existing potentials. However local entrepreneurs can not fill up the gap with other softwood in view of its high prices, as its product rent charges would cease to be competitive for the people further in view of its non-affordability for the lessee, thus leaving the shuttering business worse-off.

Economic rationales & justification analysis both on demand and supply side: -

The following rationales of the projects are being assessed.

- ◆ Development of cottage industry for the mentioned products will help create demand for locally available cheap multi-purpose wood presently being misused.
- ◆ The created effective demand will enhance prices of the under-valued locally produced

multi-purpose wood that will create rationale for its further growing on commercial basis.

- ◆ The fresh environment of growing multi-purpose tree will further expand base of cottage industry with its supply function thus providing basis for commercial viability of farm forestry of the indigenous fast growing multi-purpose species due to created market on the one hand and cheap supply of raw material to the proposed cottage industry in future on the other.
- ◆ The enhanced prices due to created demand will bring income generation to the tree growers/ members of the target IGs and TGAs, thus paving way for poverty reduction resulting from good pricing of their farm production. Farm Forestry & nursery raising will get its roots as enterprise.
- ◆ The present trend of directing multi-purpose wood to fireplace can be diverted to commercial value-added use.
- ◆ The project will be able to introduce commercial use of multi-purpose wood for value added use. Its multi-pronged utilization shall bring extra employment both on the supply as well as demand side of the Agency economy.
- ◆ The activity of better wood-resource utilization will help improving economic conditions and general living standard of the people.
- ◆ The sagging import of fuel-wood as well as timber from neighborly Afghanistan will be timely managed / substituted as result activity.

Project Rationale:-

Wood-based cottage industry is a viable profitable business if done properly on Commercial basis. Demand for Wood-based articles is growing considerably as socio-economic development is taking place. More and more people are becoming aware of the beauty and delicacy of the wood-made articles for a number of its intrinsic value in comparisons to metal-made. Daily use, official requirements, weddings, and other such social

customary gathering events are incomplete without wood items. Wood also has more aesthetic value than the ore.

Overall, this sector is still in infancy, still going through birth pains. This is not a good sign considering the years this sector has been around with abundance of cheap wood. The major reason for this slow development process has been the lack of local education, motivation and mobilization to the relevant stakeholders to enter this field. The credit goes to local small and poor carpenters who have kept on going without much technical or financial support in the past. Whatever post-harvest handling techniques are being used to the wood is the direct result of their personal ingenuity, however primitive they may be. Majority of the industry is unorganized despite great potential for making better livelihood for those who comes into this field and do it on progressive basis.

The need-based demand for freshly introduced wood species will also indirectly help to satiate burgeoning local demand for firewood in the wake of development of local consumption for firewood within Afghanistan in view of return of refugees to their homeland and imposing sanctions by the Agency political administration on cutting of local forest in Mengal in UK, Para and Zaran in FR Kurram . The recent price hike in fuel wood in the face of befalling winter tends to jeopardize the supply of it on affordable cost to the agency dwellers. The prices of oak fuel-wood at Kharlachi , Wutakai and Burdki (the only tree functional outlets for wood from Afghanistan) has suddenly jumped up from RS 35 to RS 70 per maund, which is alarming. Reconstruction campaign in Afghanistan is on the cards of the allies' forces that amongst other repercussions may stop considerably free pouring of timber and firewood to Pakistan on cheaper rate. The classical unfettered flow of such wood to Pakistan has been seriously threatened.

A comparative statement of supply line and wood prices can give us clearer picture.

FIREWOOD

Period	Supply of firewood (Per day average)	Supply Weight in maund	Price per maund (Average)	
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February 2002	12 trucks	3000	RS 20	
September 2002	10 trucks	2500	RS 35	
October 2002	3-4 trucks	750-1000	RS 75-80	

TIBER WOOD

Period	Supply of firewood (Per day average)	Supply in cft	Price per square feet RS (Average)	
February 2002	6 trucks	3000	Kail	150
			Deyar	250
September 2002	2 trucks	1600	Kail	300
			Deyar	550
October 2002	1 trucks	750-800	Kail	600
			Deyar	800

As per principle of Economics " **Demand create supply**" so this extra-created demand arising from import shortage and development of cottage industry locally shall divert the attention of local population toward growing quick yielding multi-purpose species preferably on waste and abandoned lands over a period of time. The import from Afghanistan and of some special wood from Mardan will also be substituted. During the intervening period the market forces will automatically adjust supply and demand flow not so unfavorably to the stakeholders due to the special absorption capacity of the local market.

Project Preferability:-

Though it is a labour-intensive enterprise, the high returns as compared to any other local venture makes it economically more viable. Low cost of labour combined with very reasonable low-cost inputs is the basis for making this project attractive in Kurram. The project has strong relationship with other pursuits of FFP both on demand and supply side in the project area. These all together provide sound preferability for the project.

Social Analysis:-

Social acceptability:-

The cheap free flow of firewood and timber from Afghanistan paradoxically kept disengaged the mind and wisdom of local community to think about a forestation of local fast growing species despite ideal agronomic conditions for the production though culture for horticulture thrived in semi-developed fashion. To the author surprise the general public opinion in all the three sub-region of the Agency was found spirited to accept the importance of agro-forestry in their socio-economic life and adopt it as a staple source of livelihood on scientific basis. Despite lack of adequate productivity knowledge of the local wood the people in general are ardent to adopt farm forestry in the form of block plantation on their waste and abandoned land as well linear plantation. They showed their positive feelings toward such efforts whosoever stepped forward to help them giving technical guidance. They seem cognizant of looming natural resource debacle culminating from the fresh events taking place in the neighborhood as well as local lower supply against increasing demand. They were also found susceptible to the idea of putting wood in the value addition pursuits and improve their income levels. What is absence is the organized awareness and motivation to put them on the track. They seem docile fully reciprocating any effort in this direction and ready to play their pro-active role in natural resource based income generation, capacity building and overall community-based NRM activities.

Strength of the project:-

1. Availability of cheap raw material.
2. Relatively, involving less sophisticated technology.
3. Availability of cheap and skilled labor.
4. Low capital investment.
5. Growing local market as well availability of non-local market.
6. Comparative advantage of the area.
7. Possibility for expansion in allied, ancillary and causative productive income generation and NRM activities. The activities of the project have nexus with nursery raising and plantation promotion.

Technical designing of the Project:-

This study as per its TOR is confined to financial and economic aspects. Once the project is determined basing on this pre-feasibility study, the task of detail technical designing can proceed that will include working out TOPs for partnership with different players, finalization of specifications for procurement of facilities & equipment and implementation plans, marketing plan etc. Designers are supposed to bring the views of policy/ decision-makers and technical experts together. However the study may discuss some of ancillary and appurtenant topics having a functional relationship with technical designing. Some of these are as under:

Viable Economic Size of the unit:-

A shop of one or two room for 3-4 persons would be economically viable unit considering the amount of effort needed to meet the pre-assumed market demand.

Manpower Requirements with budget:-

Employee	NOs	Pay (RS) Monthly	Pay (RS) Yearly
Foreman/production controller cum accountant:	1	6000	72,000
Skilled Workers	3	4000x3= 12,000	12000 x 12= 1,44,000
Total:	4	18,000	2,16,000

Besides, one another showroom or shed will be required to place furniture after all finishing touches and ready for sale.

Current Industry Structure:-

Currently Kurram agency has 18 of such standard shops out of which eight will be selected that can serve as the manufacturing unit for our wood-based cottage activity. For the time being 6 such shops in Parachinar and one each in lower Kurram at Sadda or Bagan and one

another at Markhani of FR would be established initially. Necessary infrastructure is already in place in these units.

Local market furniture at Kurram is accommodating different varieties mostly using Cedar and Kail wood locally called Bayjur. The use of other wood is negligible.

The units at Parachinar are the major suppliers to fulfill wood product demand of the Agency.

Sales & Marketing Issues

We should not be expecting high-end furniture from the target unit unless HR development of the units is made and latest technology and proper marketing strategy is in place. Therefore our market access initially will be through competitive-cost-based price strategy instead of quality specially articles of gentry use.

The following market share is estimated for the first year.

Products	Item for local sale (Production percentage)	Export out of the agency. (Production percentage)
rates and shuttering material	95	5
Office furniture	90	10
Household furniture	50	50
Handicrafts/ small value-added articles.	30	70
Charpai logs and legs.	20	80
Parquet flooring (wooden flooring tiles)	0	100
Boards, particleboard, batten board, Insulating board.	0	100
Wooden electrical accessories	5	90
Agricultural implements.	5	95
Handcrafted and office table articles, thrash baskets and the woodcarving, miniature.	10	90

The demand for office furniture is steadily increasing and is expected to grow as

peoples' personal lives continue to be merged with their office life. The difference of wood price between Kurram agency and other parts of the settle districts is phenomenal.

The need as well as demonstration effect is fast creating demand for household furniture.

Retail sale outlets can be considered to local consumers. These outlets could be anything from a roadside corner kiosk to a proper retail outlet shop in some high-end passing locality if the manufacturing unit is situated somewhere off the road.

However besides retail outlets focus shall be on developing wholesale markets through the effective marketing network from next year. The major buyers can be corporate and institutional customers. These include hotels, offices, education department, private schools, halls and most importantly general households in other cities. Effective marketing shall remain the corner stone of the successful enterprise.

So far as ceiling construction is concerned the government offices prefer arch ceiling construction in place of plain ceiling for the reason of snow falling in the Agency but this does not erode the market for shuttering material. The trend is changing to plain ceiling now. Almost 98% people in private sector seem inclined toward concrete plain ceiling.

Project's competitor:-

There is no potent manufacturing competitor of the project' entrepreneurs. The RSB WOODEN FINGER, a local medium level manufacturing unit does not have sharing market with the project. The said unit has a pre-contacted sale to Pakistan Housing Authority (PHA), .Pak Army & PAF, mostly products made of Dewdar and Partel.

Over the period of time the market of the project products shall expands as planned.

Project Inputs: -

Following inputs are required:

Building & Shed: -

This project would mostly do not require any major building structure. Our target group, will continue to work in the existing shops. These shops shall be re-designed with the pro-active cooperation of the stakeholders in order to fit it to the needs, therefore, no additional financial implication is involved. However in few cases a proper shed will be required. The shed should be 40'x40' covered area with open sides for air passage. This area is to be used for workshop. The construction rate is Rs 60 per square feet approximately. This construction rate is based on the fact that the shed would be of galvanized sheet made up with semi-baked bricks using local masonry skills. The idea is to cut the initial capital investment.

Raw material-wood:

These units shall buy raw material wood directly from the forest farmers, those members of the TGAs of FFP who are presently selling their standing linear as well as block plantations on throw away prices, mostly finding their way to the fireplace. The important aspect of buying directly from farms means better profit margins for both farm owners as well as entrepreneur. This they achieve by eliminating the Middleman. To make a viable market there can be sale on credit. The credit facility for dried wood can be fifteen days and non-dried of one month. This will lower the cost, providing further cushion for liquidity and selling edge over the competitors in the market. A one-time working capital of Rs 30,000 is recommended as interest-free loan to each entrepreneur. Due to the inherent strength of the business the money shall be paid back to the FFP within first year of the project. The total loan comes to RS 2,40,000

To keep the business as well as market buoyant there can be product sale on credit. The credit facility can be of one month maximum.

Power supply:

Hopefully the electric supply in the project area will be improved with the advent of new local government system that is on the cards of the government. However to be on the safer side power regulator should also be installed in the units. It would cost about RS 4,000 to install 4000 Watts capacity quality regulator. The entrepreneurs may arrange it out of their

own resources of adjust in their working capital.

Labor:

General formula is 3-4 persons per unite including the foreman. The foreman would keep the work moving and also work as accountant to manage the financial management of the unit. During peak season, temporary force can be hired on daily wages. But that cost is negligible. Since the existing force will continue therefore no additional financial implication is involved in real term.

Fixtures & Tools:-

The FFP can assist the project in working capital partially. Basic tools and fixtures would include cutter, gauger, plainer, drill and accessories. Besides these tools, other small implements are required for the business. Almost all target shops have these implements. However they may like having its latest electric version if the market gathers momentum.. Total capital requirement for all these items is estimated of RS 1,88,000. This investment will be negotiated with the entrepreneurs and can be funded through interest-free loan by FFP from case to case basis.

Packing/Packaging:-

Outgoing bulky wood items are simply packed with cords. However small items can be packed in cardboard , purposely designed cartons. Others in corrugated sheets, bubble sheets, or wooden crate inner covered with Malkeen or felalain cloth for long- distance transportation. Each wooden crate can carry about small wood items of RS 20,000 to RS 25,000/- roughly. No significant overhead charges are therefore involved. Cardboard cartons are usually used for short distance transportation and small items. Wooden crates are reusable over longer periods of time. About 50 boxes/crates are enough to keep a cycle of rotation going for a unit. Each wooden crate would cost RS 100-120. Cardboard carton usually cost Rs 30/-. For safe delivery of embossed or edge-furniture corner-mould will be used. Entrepreneurs shall be trained and encouraged to manufacture MODULAR FURNITURE that could be assembled on destination. Spirit polish can be substituted with lacer and thinner

polish. Per truck delivery cost RS 10,000 only.

One day Packing training will be given to the entrepreneurs.

Transportation:-

Export of products must start from the second year of operation. Wood items packed in wooden crates and cardboard cartons would be transported to big cities from the showroom of the units via Mazda, Pick-up or truck which can be hired on rent at reasonable rates. All such shipment will be on order coming from dealers of other cities motivated through an effective marketing campaign to be worked by the IG with the technical assistance of the local FCU, the detail whereof will be worked out by the Enterprise Section of the local FCU.

Output:-

Production has been plan over a period of next five years. Vide scale of internal economies the production cost will continue depleting over a period of time if the project run on even keel. capturing the comparative higher-cost market would be another reason of cost competitiveness. The situation will improve steadily and slowly as the market establishes. Sale price also depends on quality that will be taken care of as the time passes. Sale can be against credit in order to expand the market once the market poises in such case usual credit period would be of 30 days. The major chunk of produce of the units would be sold in open market and to wholesalers on regular basis. Direct supply to retailer is possible if the offer is attractive and not transacted at the cost of regular wholesale customers.

Overall Picture:-

Total units 8 (6 at Parachinar UK one each at Makhrani FR one at Sadda or Bagan LK) The over-all picture would go something like this that once we establish the enterprise on sound footings and allowed it to run on even keel for one year, would be self-sustaining and bloom and at the end of the fifth year all units would be operating on full capacity.

Regulation:-

There is no government regulation or taxation, affecting this business locally.

Key Success Factors:-

The proposed project would have a number of comparative advantages such as :

- I. Low cost of labor.
- II. Lower rent rate of available shops/units building.
- III. Growing local market.
- IV. Cheap availability of multi-purpose wood as raw material.
- V. Tax-free zone.
- VI. Longer shelf life of the product comparing other agriculture products.
- VII. No cut-throat competitors in the business.
- VIII. Functional nexus with other objectives of FFP such as promotion of nurseries and plantation of multi-purpose local species trees.
- IX. Countries as well as regional profile suites this project.

Threats/ Weaknesses:-

- I. Non-availability of electricity at full voltage.
- II. Additional burdening/involvement of local FCU.
- III. Effective marketing for the enterprise.
- IV. Total quality control.
- V. Insufficient inflow of trade information and trends to the target entrepreneurs.
- VI. Absence of sister line units of chip board, hard board, veneer industry etc,

FINANCIAL ANALYSIS THROUGH DIFFERENT ESTIMATED STATEMENTS:-

ASSUMPTIONS:-

The proposed project is based on following assumptions:

- (1) Effective execution.
- (2) Proper coordination amongst actors/partners i.e., Local NGOs, FCU, SSU, entrepreneurs.
- (3) Effective marketing strategy of raw material purchase and finished products sale.
- (4) Time schedule/ Activity chart flow to be designed by local FCU and correctly followed.
- (5) Appropriate technical designing of the enterprise.
- (6) Developing the project as enterprise without unnecessary subsidies.
- (7) Advancing credit facility wherever essential on selected basis.
- (8) Strong community based support system.

Financial Evaluation of Wood-Based Cottage Industry:-

Key Variables		
Total Investment in Project		4,28,000
Debt	50%	2,14,00
Equity	50%	2,14,00
Interest Rate		0%
Debt Tenure		1
Debt re -payments per Year		Full in first year

Rs in Actuals					
Total Cash Flow	Year 1	Year 2	Year 3	Year 4	Year 5
Net Cash Flow to Project (after Tax)	24,0000	160000	160000	160000	160000
Interest Costs	0	0	0	0	0
Principal Repayment	Full	0	0	0	0
Total Debt Servicing	0	0	0	0	0
Net Cash Flow to investors	24,0000	16,0000	16,0000	16,0000	16,0000

Statement Summaries:-

Initial Investment

Capital Investment	Rs in actuals
Building / Infrastructure	0
Land tillage and saplings	0
Machinery & Equipment (30,000 x 8 =.....)	2,40,000
Pre-Operating Costs	0
Total Capital Costs =	2,40,000

Working Capital	Rs.in actuals
Raw material inventor 20,000 x 8	=160,000)
Upfront land lease rental 3,000 x 8	=24,000
Cash	= 24,000
Total Working Capital	1,88,000
Total Investment	4,28,000

Intial Financing	Rs.in actuals
Debt (interest free)	2,14,000
Equity	2,14,000

Statement Summaries:- Income Statement					RS in actuals
	Year 1	Year 2	Year 3	Year 4	Year 5
Revenue	3960,000	4000,000	42,00000	50,40000	5100,000
Costs of goods Sold	3168,000	3168,000	3200,000	3520,000	3550,000
Gross Profit	792,000	832,000	1000,000	1520,000	1550,000
General administration & selling expanses					
Rental expanse	288,000	288,000	288,000	288,000	288,000
Depreciation expense	20,000	20,000	20,000	20,000	20,000
Selling	358,000	358,000	358,000	358,000	358,000
Earnings before Interests & Taxes	434,000	474,000	642,000	1162,000	1192,000
Interest expanse	-	-	-	-	-
Net Profit/(lost) after Tax	434,000	474,000	642,000	1162,000	1192,000
Balance brought forward	-	434,000	908,000	1116,000	2278,000
Total profit available for appropriation	434,000	474,000	1116,000	2278,000	3470,000
Balance carried forward	434,000	908,000	1116,000	2278,000	3470,000

Statement Summaries
Balance Sheet

RS in actuals

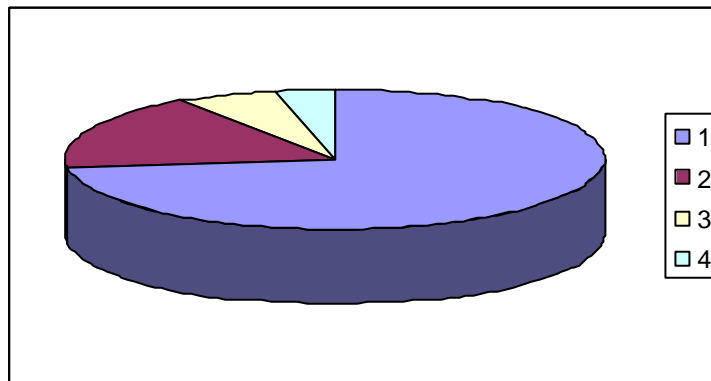
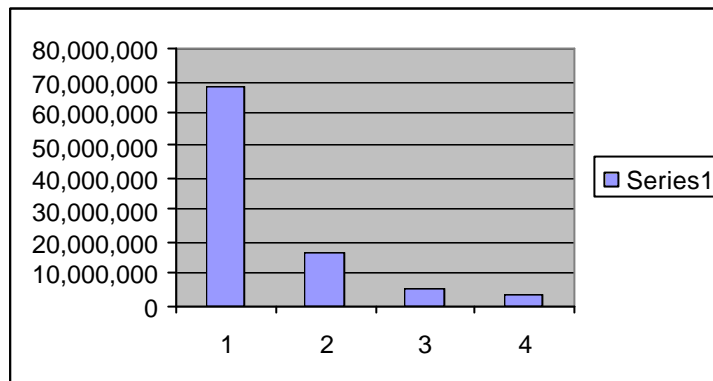
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Assets						
Current Assets						
Cash & Book			908,000	1116,000	2278,000	3470,000
Accounts receivable	-	434,000				
Raw material inventory	160,000	160,000				
Pre-paid annual land lease	-					
Total Current Assets	160,000	160,000	160,000	160,000	160,000	160,000
Fixed Assets						
Building / Infra structure						
Saplings & land Tillage						
Machinery & Equipment	240,000	240,000	240,00	240,00	240,000	240,000
Total fixed assets	240,000	240,000	240,00			
Intangible Assets						
Pre-operation Costs						
Total Intangible Assets						
Total Assets	400,000	834000	1308,000	1516,000	2678,000	3870,000
Liabilities & shareholder's Equity						
Current Liabilities						
Short Term debt						
Total Current Liabilities						
Other Liabilities						
Deferred Tax						
Long term debt	200,000	200,000	200,000	200,000	200,000	200,000
Total Long term liabilities		200,000				
Shareholder's Equity						
Paid-up Capital	200000	200,000	200,000	200,000	200,000	200,000
Retained earnings			4340,000	9080,000	1116,000	3470,000
Total Equity	400000					
Total Capital & Liabilities		834000	1308,000	1516,000	2678,000	3870,000

Statement Summaries
Cash Flow Statement

Rs in actuals

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Operating activities						
Net Profit	-	434,000	474,000	1642000	1162,000	1192,000
Add: Depreciation expense	-	20,000	20,000	20,000	20,000	20,000
Amortization expense						
Deferred Income tax	160,000					
Accounts receivable						
Raw material inventory		160,000	160,000	160,000	160,000	160,000
Cash provided by operations		294,000	334,000	502,000	1022,000	1052,000
Financing activities						
Change in long term debt						
Change in short term debt						
Add: land lease expense						
Land lease payment						
Issuance of shares						
Cash provided by/ (used for) financing a						
Investing activities						
Capital expenditure						
Cash / (used for) provided by investing a						
Net Cash						
Cash balance brought forward						
Cash available for appropriation						
Cash carried forward						

Year	Total Revenue	Total Expenditure	Net Profit	Net Discount value (NPV) @ 10%	IRR
1	3,960,000	3,168,000	792,000	792,000	
2	4,000,000	3,168,000	832,000	756,364	
3	4,200,000	3,200,000	1,000,000	826,446	
4	5,040,000	3,520,000	1,520,000	1,141,998	
5	51,001,000	3,550,000	1,550,000	1058,671	
	68,201,000	16,606,000	5,694,000	3,516,808	



ARR	140.49 %
Net present value (NPV)	45,75,479
Payback period (yrs)	6.48 months
Benefit-Cost Ratio	3.63

$$ARR = \frac{\text{Average net income}}{\text{Average Investment/ net cash flow}} \times 100 = \frac{46,66,000}{33,21,200} \times 100 = 140.49 \%$$

ARR = 140.49 %

Payback period: $\frac{\text{Initial investment}}{\text{Net return 1st year}} = \frac{4,28,000}{7,92,000} = .54 \times 12 = 6.48 \text{ months}$

Benefit-Cost Ratio:-

The Benefit-Cost Ratio (BCR) is the ratio of the present value of benefits to the present value of costs.

Since project is potentially worthwhile because the BCR is greater than 1; i.e., in our case the present value of benefits exceed the present value of costs. BCRn is 3.63, which is highly favorable.

BREAK -EVEN:-

Fixed cost are expenses that do not vary with the level of sale such as rent, utilities, building, insurance etc whereas variable cost directly related to sale and includes items such as expenses on raw material, and daily wagers. **BREAK -EVEN** point is the sale level at specific fixed cost on which business has neither a profit nor loss.

Example: If a unit has to make a chair that sell for Rs 100 each and unit's cost average is Rs 90 per chair profit margin of the unit would be :

Profit margin = price variable cost margin i.e., $\text{Rs } 100 - \text{Rs } 90 = \text{Rs } 10$

Now say for example fixed cost of a unit's manufacturing chair is RS 50,000 then

Break-even = $\frac{\text{Total fixed cost}}{\text{Profit margin}} = \frac{\text{Rs } 50,000}{\text{Rs } 10} = 5000 \text{ chairs production}$

Thus a unit would need selling 5000 chairs to reach its break-even point. If total units sell more or less than break-even the profit or loss of the business will equal the profit margin multiplied by the difference between actual sale and break-even. It also denotes that the production line does not lie on its optimal point of sale and is languishing. For example if a particular enterprise sold only 4000 chairs the loss would be:

$$1000 \times 10 = 10,000.$$

Sale of 6000 chairs would bring profit $1000 \times 10 = 10,000$.(provided the extra supply find market and the market is not yet satiated.)

Note. Since in this project the break-even is met somewhere in the first year of the project i.e., in the 7th month. The reason is low fixed cost in face of immediate running profit. Henceforth the project shall run into profit. Here cost on non of the point of production level succeed profits. The moment it succeed profit and intersect profit line it will be the break-even point.

ECONOMIC ANALYSIS.

The economy of the Kurram agency is not so vibrant to be instrumentally effected from the outside economic affects in the short run nor it may influence the outside economics so perfectly. This imperfection in the market has to be covered through the shadow price machinism.

Internal Economic Incidence:-

On positive side it is expected that the proposed intervention will ensue certain internal positive economic consequences despite market inadequacies due to the followings: -

1. The project is going to take-over running established business.
2. No marked depreciation cost in the next five years is expected therefore no amortization of assets is needed.
3. In the short run there seems no upward trends in inputs cost. Therefore no explicit business loss. Whereas suitable marketing plan can reap explicit benefits due to various competitive edges.
4. The expected high value addition can better offset operating cost as well as fixed investment cost.
5. No escalation in cost on dollar basis over the period of project life.
6. No sensitivity analysis involve providing against any explicit strong risk factors.
7. The cash flow statement is highly encouraging comparing project actual investment.
8. Encouraging marginal as well as average revenues as to cost that provides for reasonable net profit margin.
9. No local taxes/ tariffs involved burdening cost column.
10. No interest on debts involved burdening cost column.
11. On non-book/ actual side the equity ratio is greater than the FFP investment therefore the project can legitimately expect due diligence on the part of entrepreneurs protecting the project from internal flaws. It also resolves uncertainties left the project least vulnerable to unforeseen risks.

There are imperfections in the marketability of the products both locally as well as non-locally that may tend to influence the projected estimates. Political turmoil, sporadic ethnic strife, transactions costs, inflationary pressure, tariff and taxes while exporting the products out of the agency all are the potential elements of the market imperfection which are to be covered by reducing product market prices by 20 % to get shadow prices in order to reach at most dependable economic analysis. This will put our overall analytical endeavors on the more realistic grounds. Projected revenue will have to be adjusted accordingly.

Wider Economic Incidence:-

Investment is going to pay-off economic returns both to the economy as a whole and to individual stakeholders in the agency including entrepreneurs, farmers and common man in particular in the long run with no social cost. The project would complement the already defined economic needs of other state departments of the Agency in an accumulative manner. Timber wood used as fuelwood remained often a non-marketed commodity for those who did not purchased from the market. In economic analyses if we fixed proxy-prices to assess the cost of substitutes of undervalued timber a huge economic loss will be identified. With the fresh activity the derived stumpage prices will improve. As a result, non-fuelwood resources will not be undervalued further.

The growing demand for forestation will contribute to the environmental values as well. Externalities such as watershed, habitat protection conservation of bio-diversity & ecosystem, soil conservation etc all are projected to widely benefit.

CONCLUSION:-

The project concluded desirable on the following grounds amongst others.

- A. The payback period is shorter therefore the business will not face liquidity crises. It also shows the rapid speed of generating cash flow to meet its liabilities well in time.
- B. The ARR is favorable.
- C. The net present value (NPV) is favorable.
- D. The forecasted cash flow, if properly managed and reaped through proper marketing, will remain favorable throughout the business.
- E. The capital budgeting analysis shows that it is the best investment opportunity out of the available alternatives. Involving the amount of investment we can generate the

best of return. The marginal as well as the average benefits as to the cost are high throughout. The project can stay competitive and ensure its survival out of its favorable return even after five years provided proper marketing strategy is worked out for its sustained business. One can feel a perennial market scope outside for the project products.

Recommendation:-

All these give sustainability coverage to the proposed project and recommend the project for implementation.

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