

Feasibility Study

Gems & Jewels

in District Chitral



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Prepared by



FCG Human Capital (Pvt.) Ltd.

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THRIVE

PREFACE

This Gems and Jewels feasibility study is one of a series of five such studies developed for the Chitral Area Development Project, a project of THRIVE Pakistan. The purpose of the assignment was to identify a number of key products in Chitral and three neighboring valleys and to provide the necessary information to enable small-scale business operators wishing to enhance their incomes in sustainable ways. This feasibility study is intended to be a significant contribution of the CIDP project for the communities of Chitral.

The feasibility study has been prepared for those potential entrepreneurs and businesspersons who want to start a new business or to expand an existing business in Chitral and the surrounding valleys. The feasibility study provides all of the relevant information required to establish a successful Gems and Jewels business.

In addition to outlining socio-cultural ideas about honey, financial information and a business plan, the study provides key recommendations for creating brands and boosting sales. A tabulated format in Microsoft Excel with all details is also part of this study: it contains all of the relevant calculations and links required to operate the business models.

The information, costs and numbers used in the feasibility study were collected from actual sources and resources from Chitral in 2014. Potential users of this feasibility study are expected to reconfirm current prices and to conduct a short assessment or validation of this feasibility study, prior to starting a business or investing in the sector.

We would like to take this opportunity to convey our sincere thanks to all the stakeholders involved, including the FCG Human Capital Team, the Thrive Management team, and the local Support organization of Chitral all of whom provided excellent support and input in numerous ways.

The feasibility studies are available at the CIDP (THRIVE) website, the Chitral Chamber of Commerce website and the Chitral Agriculture and Horticulture Departments.

The “CIDP Team” wishes the users of this document and those who initiate businesses the best of luck and success in their business endeavors.

The THRIVE and CIDP Teams January 2015

DISCLAIMER

This feasibility study was conducted by FCG Human Capital Private Limited for the Community Improvement Development Project (1st May, 2009 – 31st December, 2014) for THRIVE Pakistan. The project was funded by Norwegian Government. The facts and figures used in the feasibility were collected during the assessment in the fourth quarter of 2014. The users of this feasibility study are expected to re-evaluate the prices, costs and resources prior to establishing the enterprise. The user is solely responsible for all costs incurred while establishing a business based on this study.

Every effort has been made to ensure that the costs quoted are accurate and that all details of establishing or expanding a honeybee-focused business have been taken into account. Individual inputs and results will vary depending on factors such as the value of the Rupee, the number and market strength of competitors, the demand for honey and its by-products in different places, the availability of skilled workers and natural factors such as the Gems and Jewels and environmental and climatic conditions.

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BACKGROUND

The FCG Human Capital (Private) Ltd. conducted a Value Chain Assessment of the Gemstone sector (excluding diamonds), in Chitral District, encompassing Chitral, Drosh, Mastauj and Booni, in February, 2014. That study gathered information from collectors (miners), trade exporters, local and regional vendors, Government institutions, members of civil-society Local Support Organizations where these exist, and consumers. Secondary sources were also consulted, to get the best sense of the complexity of this means of livelihood.¹ The Value Chain Assessment was conducted for the Chitral Integrated Area Development Program (CIADP).²

This Feasibility Study uses and builds on the information gathered and aims to inform people and institutions in the Chitral area on ways and means of enhancing and expanding the value chain so that at every stage (from mining to meeting export demands), economic opportunities can be strengthened and more jobs created for local people in Chitral District. A significant aspect of this endeavor is putting information into the hands of local people and suggesting ways of generating secure incomes and fair returns on labour.

Gems and jewelry have been a vital part of many cultures around the world; for ages, people have been using gems and jewelry as ornaments and gifts and as investments. However, despite Chitral's abundance of potential in the gemstone sector, it has remained very limited in terms of productivity and its development into a profitable sector. This Feasibility Study addresses some of the limitations and offers recommendations for strengthening the opportunities for income generation.

Chitral is one of several primary gemstone mining areas in Pakistan. The Hindu Kush Himalayan range contains large amounts of many kinds of minerals and gems.³ These include: emeralds, rubies, sapphires, aquamarines, moonstones, amethyst, tourmaline, peridot, topaz, garnet (known locally as yaqoot), red spinel, pargasite, diopside, apatite, azurite, rose quartz, and agate.⁴ Among these, the most prevalent gems are aquamarine, tourmaline, and topaz as well as ruby, peridot and quartz. Accurate figures are not possible, but estimates suggest the deposit of ruby is 1.5 million carats, aquamarine 02 million carats and tourmaline 0.1 million carats.

Despite having major deposits of gemstones, Pakistan's exports of unworked precious and semi-precious stones accounted for only 0.4 per cent of worldwide exports by value. This figure may be an underestimate, however, given the high level of smuggling.⁵

The world trade in gemstones (excluding diamonds) is estimated at US \$ 18 billion per year. Pakistan's estimated exports are valued at US \$50 million a year. This share is increasing over time. The industry in Pakistan is growing rapidly and modern techniques and technologies are becoming available in some areas.

The demand for unworked gems is increasing. India, China, and Hong Kong are the largest importers of unworked gems although the USA and Switzerland also import large numbers of worked and unworked gemstones, according to one study. Re-export is very prevalent, as gems are often traded multiple times for processing prior to final sale at one of a small number of international gem polishing hubs.

¹ A major secondary source is the AKRSP Value Chain Assessment study conducted in 2013-14.

² www.ciadp.pk

³ Wikipedia (accessed October 2014).

⁴ An exhaustive list of minerals and gemstones found in Chitral and Gilgit-Baltistan is found in: Malkani, Shah, Kakepoto, and Yousuf. *Mineral and gemstone resources of Northern Khyber Pakhtunkhwa and FATA regions: Pakistan-A good hope*. Peshawar: Pakistan Mineral Development Corporation.

⁵ Gems Value Chain Study, Agha Khan Rural Support Program, Chitral.

However, the local gem collectors and traders in Chitral constitute a very small percentage of the entire sector. They also work within a limited spectrum of the sector: i.e. small-scale mining, and local marketing of unworked (uncut and unpolished) gemstones.

It is difficult to assess the amounts of unworked gemstones that are available, for several reasons. Most collectors work in secret; the gems are found on a very small scale; they are sold to tourists and provincial markets, with no records kept; exploration and collection requires permission from the authorities, which leads the collectors to keep this business secret. In some places, one or two individuals control the business, limiting the opportunities for others. Some of the collectors and traders have to take their gems to the big markets of Peshawar and Islamabad, which incurs huge logistics costs and puts them at risk of being robbed. Many of the most valuable gems are smuggled out of the District.

The Government has provided very limited support to the sector in Chitral.⁶ This applies to information, the regulatory environment and the lack of training facilities.

Some families rely on collecting and trading gems for their livelihood but for most it is an additional source of income which supplements farming, horticulture and home-based enterprises. Very few people can earn a living only from gemstones.

Finding the gems (sometimes in underground mines) is difficult and risky. The safety conditions for collecting gems are very poor. The exploration process is hazardous, involving potentially dangerous explosions that may injure people. Without protective equipment of any kind the collectors breathe in potentially toxic dust.

Exploration, collection and marketing are done by men. A small number of women are involved in setting the precious or semi-precious gems and jewels in imitation jewelry. A very few women are also employed in polishing the gemstones and in some cases sewing gems onto clothing.

Despite the difficulties outlined in this and other studies, there is a huge potential to expand the sector within Chitral. There is also a potentially expanding market for local jewelry which used non-precious gems set in silver. Expanding the sector could increase profits for those presently involved and could enable many more people to become productively involved. This would enhance incomes and provide jobs.

OPPORTUNITY RATIONALE

There is tremendous potential at every stage of the gemstone value chain for improvements, enhanced business opportunities and for export to other parts of Pakistan and to Pakistan's major trading partners. There is also enormous potential in Chitral to expand the production of handmade jewelry and art work, although a great deal of refinement is needed to ensure higher standards and quality for the local market. A lot of effort will be needed to systematically increase legal exports to other parts of Pakistan and abroad. As noted above, this Feasibility Study focusses on improving opportunities and conditions for small-scale collectors and jewelry-makers.

Gemstones and precious and semi-precious stones have always been associated with certain valued characteristics – rarity, brilliance, purity of colour and weight – and have had specific spiritual or mystical powers attributed to them.

⁶According to the AKRSP report, in 1970, the All Pakistan Gems Merchants and Jewelers Association (APGMJA) was set up as the first initiative to develop private-sector actors in the value chain. In 1978, the state-owned Gemstones Corporation of Pakistan was established within the Ministry of Petroleum and Natural Resources. However, this closed in 1997. In 1988 the All Pakistan Commercial Exporters Association of Rough and Unpolished Precious and Semi-Precious Stones was established in Peshawar. In 2007 the Pakistan Gems and Jewelry Development Company was established as a subsidiary of the Pakistan Industrial Development Corporation, Ministry of Production, and Government of Pakistan. Its purpose is to enhance the value chain productivity of the gems and jewelry industry of Pakistan 'from Mine to Market' by enhancing exports through upgrading technology, developing skills and marketing/branding initiatives.

Gems and jewelry are an essential part of ordinary life in Pakistan; hence they are popular across all economic strata.

Most of the jewelry used in Pakistan is made of gems set in gold and silver. A small percentage of gemstones are used in high-fashion clothing including bridal wear. In the local market, a specialty of Chitral is the traditional hand-made, gold-plated enamel jewelry. This is made and sold with local pricing in mind. These products include hand-made rings, pendants and cufflinks, which are well-known and valued. In the higher price range, some rings are studded with a piece of Markhor horn: the final products are very expensive, ranging from 100,000 Rupees and more, depending on the quality of the gems and stones and the amount of horn.

THE BUSINESS ENVIRONMENT

There is a high demand for the gems across the Project area. This is especially so in Mastuj, where not enough gems are collected and processed for sale. As mentioned in other studies, Drosh has the richest deposits of marble, minerals and gems.

In some of the Project areas, one or two gem collectors control the bulk of gems available. This makes it difficult for others to enter the market and/or drives the business underground.

The Government requires that people seeking gems have a lease on a piece of land. This requirement has resulted in illegal exploration for gems, since the leases are costly. Government officials are sometimes accused of granting leases on the basis of unfair preferences.

The polishing equipment presently available is very basic, ranging in price from 1,000 Rupees to 16,500 Rupees.

Competition: results from the rarity of precious gems and from the activities of too many collectors and results in low prices. Competition is reported to be very high in Mastuj, perhaps because fewer gems are available there. In the other three areas it is said to be less of a problem. It is quite likely, however, that the people in the Project areas are not fully aware of the scale and scope of the gemstone industry, even in their own valleys.

Pricing: The prices for the gemstones are set by the collector or shopkeeper and depend on the size, quality, colour and category of the gem. During the Value Chain Assessment respondents reported local prices ranging from 500 to 50,000 Rupees but anecdotal reports suggest that much higher prices can be commanded for very precious gems when these are sold outside Chitral. In general, the gemstone collectors are dissatisfied with the prices they command locally, because most local customers cannot pay high-enough prices. One man sold a precious stone for 5,000 Rupees, but said that its price in the Pakistan market would have been 20,000-30,000 Rupees and in the international market the price would have been between 75,000 and 80,000 Rupees.

Marketing: Across the four project districts, the stones are sold primarily to local people (over 50%), tourists (around 40%) and shopkeepers (around 10%). In Mastuj, sales to tourists account for 71% of sales. Sales to the jewelry industry are very low (4% overall and 14% in Mastuj), but zero in Drosh, Booni and Chitral, which suggests that the local market absorbs all the gems produced. If a large-scale, legal export market is to flourish it will require intensive and well-informed effort.

Constraints

The gem collectors in Chitral have a very limited marketing mechanism. Some dealers do contact traders from Peshawar and elsewhere in Pakistan, but these traders offer very low prices because the gems are uncut and unprocessed. The traders also know that the local people would not know the prices the gems can command in the wider market in Pakistan.

Some of the shopkeepers demand unrealistic prices, and the local market for expensive gems is very small. The majority of gems sold to local shopkeepers are not refined enough to attract purchasers.

Skills and Knowledge Environment

There is almost no knowledge of gemstone cutting and polishing, and almost no training in these skills, in the District. Training in gem cutting and polishing is available in Gilgit-Baltistan, having been established

in 2006 by the Rupani Foundation, in partnership with AKRSP and the Karakoram Area Development Organization. Currently the Foundation operates one Centre in Chitral.

The few skilled workers who can operate the cutting and polishing machines are only found in Chitral, where they have learned the skills from civil-society organisations. People in the other valleys have no access to this kind of training. Even the skilled workers of Chitral do not have opportunities to utilise their skills for their livelihood. If any training is provided, it is only offered to men.

There is no Government support available to the gemstones industry. The government ban on exploration and the demand that they purchase leases on mines, are the principal problems for collectors. The Government training institutes do not provide any training in cutting and polishing. Nor do they provide training in developing business skills for people wishing to establish businesses related to gems. (A 'gem exchange' opened in Peshawar in 2009. Information can be accessed at www.pgjdc.org.)

There are no scientific techniques for exploration and extraction of the gems. Nor are there any proper tools available to separate the gems from the debris and to polish them.

Cutting and polishing gem stones is a highly-skilled trade and it requires very expensive machinery. This can include microscopes, buffing machines, drilling machines, cutting machines, and grinding machines. There are also polishing machines and polishing chemicals, but there is almost no local knowledge of these.

The majority of local people are not aware of the business potential in their areas. The exception is Mastuj, where everyone rated "Trading" as the best business in the area. Mastuj is almost mid-way between Shandur and Chitral, so can be considered a trading hub. Only a few gem collectors are presently interested in going beyond basic collecting and selling unworked gems. If the sector is to flourish and diversify people who see the potential for enterprise-development will have to create increased demand.

Affordable credit is scarce, although investments in machinery, workplaces and business training would be necessary to expand the gem-related enterprises.

Other than keeping the gems with them at all times, the local people have no knowledge of or any means of safety or storage.

RECOMMENDATIONS

All of the recommendations listed below are complex and will require integrated efforts – another kind of ‘value chain’ - in order to succeed and to benefit local people.

- The Government and development-sector institutes and organizations should take the responsibility for helping local artisans and businesses to market their valuable resources in national and international markets. As noted above, some efforts have been made in this regard but many of these have been ineffectual. These efforts to improve the entire sector should begin with a well-developed strategy and an implementation plan. These should be informed by opinions and experience from all of the stakeholders who are presently involved.
- Existing sources of available information on the gemstone sector should be assessed in order to learn from others’ experiences and ‘best practices’. It will be useful to examine the efforts of major organizations such as AKRSP to improve the gems and jewelry value chain in Gilgit-Baltistan and Chitral.
- Small-scale surveys should be conducted to expand the present scope of mining. Large scale surveys lie within the domain of the Government but the local people should have better knowledge of the deposits of gems and stones available in each of the CIADP Project areas.
- The Government should make efforts to teach the miners/collectors safe practices.⁷
- The market demand for the stones should be explored in Pakistan and abroad. The information collected must be sector-specific: i.e. markets should be identified for ‘low-value’, high-demand local products; the demands of tourists of various kinds; the markets for mid to high priced gems in Pakistan and abroad; and the markets for high-end jewelry and for fashion and bridal wear decorated with gemstones. Marketing for export within Pakistan and to other countries also requires specialized information. This information should then be ‘fed into’ the strategy, the training programme design and the marketing plans.
- There must be both planning and a transparent government policy that support safe exploration and collecting methods. This should begin with consultations that would lead to either removing the ban on exploration or regulating the process of leasing mining rights. A discussion with Government officials should be held regarding subsidies in exploration and collection of stones for promoting this industry. Local people need more knowledge of the current regulatory environment and should have a say in proposing changes to that environment.
- Marketing strategies, plans and processes need to be conceptualized and developed. The immediate priority should be the short-term needs and capacities of small-scale collectors and village-based vendors and artisans.
- Exposure-visits, initially to Gilgit, Peshawar and Islamabad, by local craftsman and businesses, should be arranged by the Export Promotion Bureau and similar institutions. Women who are engaged in making jewelry should have their own exposure visits.
- Any endeavour to support the local collectors and jewelers will require the establishment of organizations focused exclusively on this. The best option is for small groups of people to share the costs of establishing and maintaining production workshops for this purpose. Because they are trusted, the LSOs in Chitral can play a major role in bringing people together, bringing in expert trainers and establishing showrooms where people can display their wares to tourists and traders from outside the region. The existing Local Support Organizations (such as KADO in Gilgit) should be encouraged to enhance their efforts to improve the skills and business environments for their members and their communities. On the same note, Village Development Committees for the gemstone sector should be established.

⁷ As noted in the AKRSP Value Chain Report, Chitral.

- Women who are interested should be encouraged and trained (in business skills, market demand, and aspects of the craft) to establish businesses, including setting non-precious gems in imitation gold or silver jewelry. Women should also be trained in sewing garments for the 'high-end' fashion industry, which may include gemstones.
- Organizations like the Rupani Foundation and other gem-related institutions should be encouraged to establish a long-term presence in this sector for exploration, collection and marketing of the gems and jewelry.

FINANCIAL FEASIBILITY

Capital Requirements

The following capital requirements cover three stages of investment. The development stage (Fixed Assets) is used to buy or rent land, machinery, equipment and fixed assets. The second stage (Pre-Operating Expenses) concerns managing the expenses prior to starting the business, such as registration, marketing, and surveys, while the third stage (Working Capital) is directly linked to production, the purchase of raw materials (that is, the rough gems and stones), paying staff salaries and managing overheads such as utilities and rents. ⁸

Sr.	Investment Item	Amount (Rs.)	Percent
1	Fixed Assets		
	1.1 Machinery	154,200	
	1.2 Fixed Assets	52,500	
	Sub-Total	206,700	
2	Pre-Operating Expenses		
	2.1 Pre-Operating & Marketing	140,000	
	Sub-Total	140,000	
3	Working Capital		
	3.1 Over heads	454,200	
	3.2 Raw material	2,840,125	
	3.3 Salaries	492,000	
	Sub-Total	3,786,325	
	TOTAL	4,133,025	

Equity Required

An amount of Pakistani Rupees 4,133,025 would be required to start the business. The major cost is for Raw Materials, i.e. gem stones, which can be obtained on credit from local collectors. If the costs are prohibitive and credit cannot be arranged, the production targets can be reduced to start the project with minimum funds. The reduction of targets will subsequently reduce the initial capital required by reducing the costs of fixed assets and labour. The human resource can be managed by the entrepreneur, rather having salaried positions in the first stage of the project.

Source	Amount	Use
Equity	4,133,025	Working Capital
Total	4,133,025	

⁸ These figures are derived from a market survey conducted during the Value Chain Assessment.

Production Plan

The enterprise will be economically viable if the production plan outlined below is followed.

No.	Products	Production				Unit Rate	Total Sale	Remarks
		Qty	Nos	Month	TOTAL			
1	Aquamarine / Carat	350	1	3	1,050	1,000	1,050,000	6 month running in Summer
2	Tourmaline / Carat	350	1	3	1,050	1,500	1,575,000	
3	Quartz / Carat	600	1	3	1,800	200	360,000	
4	Garnet / Carat	500	1	3	1,500	300	450,000	
5	Emerald / Carat	7	1	3	21	30,000	630,000	
6	Spinal Ruby / Carat	100	1	3	300	5,000	1,500,000	
7	Topaz / Carat	7	1	3	21	2,500	52,500	
8	Lippies / Carat	150	1	3	450	50	22,500	
							5,640,000	Per year

Conditions that may limit production cycles and the smooth flow of raw materials include the following:

- Small-scale (artisanal) mining is not possible at present and will not be possible in the near future. Government regulations preventing mining are one hurdle; others include the fact that mining is very expensive and returns on investments cannot be guaranteed.
- There is limited access to up-to-date information on advance design trends for tools, jewellery and fashion.
- Nepotism and corruption prevail in the Government Department concerned with leasing gem-collection areas. Thus local communities are operating informally in this sector.
- No advanced formal service providers are available and training facilities are inadequate.
- Road accessibility to the high altitudes mines is very limited.
- There is very limited financing available to invest in the modern technologies needed to establish and maintain a business in the gemstones sector.

Markets, Machinery and Expansion

- Currently the market/sales points for the gems and jewelry are the local markets. They could also be in Namak Mandi (Peshawar) or Suha Bazaar (Lahore) for wholesale. The final polished products can be sold in gems and jewelry markets Islamabad and other big cities. The handicraft shops in well-known malls, hotels and historical places can also be ideal places for finished products. Participation in Sales Exhibitions can also have multiple benefits including publicity, sales and marketing.
- Major picnic and tourist attractions can be developed (in peak season) in order to reach (during their peak season) more tourists.
- International-quality machinery for cutting and polishing is very expensive: machinery from local and national companies is suggested for the finishing processes. The addition of processing machines is only viable if production is allowed by the government in an 'artisan mining policy', which is not yet available.
- The local producers can develop business plans for expansion to meet international standards.

Fixed Assets and Machinery Required

All of the basic and required assets to start the business with minimum investment are listed below.

Sr.	Description	Units	Price	Total
1	Table for Lamp	2	1,500	3,000
2	Table for Machine	2	2,000	4,000
3	Trimsa Blade	2	1,000	2,000
4	Wrench Set	4	2,000	8,000
5	Diamond Tool Set	1	10,000	10,000
6	Plastic Lap	1	500	500
7	Copper Lap	2	10,000	20,000
	Chair	1	2,000	2,000
	Dope Stick	1	3,000	3,000
Total cost				52,500

Machinery

The purchase of local machinery is suggested (from Pabbi, Peshawar) in this feasibility study. The international-standard cutting, carving and polishing machines are only available from Thailand, Sri Lanka and China. The cost of these machines is very high, so their purchase is recommended at the expansion phase of the business.

Sr.	Machinery	Units	Price Per Unit	Total
1	Trimsa	1	35,000	35,000
2	Festing Machine	2	50,000	100,000
3	Curving Unit	1	10,000	10,000
4	Drill Machine	1	2,000	2,000
5	Spirit Lamp	2	100	200
6	Table Lamp	2	1,500	3,000
7	Performing Unit	2	500	1,000
8	Warnier Cliper	3	1,000	3,000
Total Cost:				154,200

Materials

There are two types of material costs⁹ required in any business, i.e. direct and indirect material. The indirect cost is that which is essential in any case, while the direct is associated with the quantity and number of units produced.

⁹ The vendors' information for each material is provided in Annex 01.

Raw Materials	Unit Price of Materials	Quantity Needed		Nos./ Months	Total Cost
		No.	Rate		
Direct Materials	Aquamarine / Carat	500	500	3	750,000
	Tourmaline / Carat	500	50	3	75,000
	Quartz / Carat	1,000	10	3	30,000
	Garnet / Carat	1,000	5	3	15,000
	Emerald / Carat	10	10,000	3	300,000
	Spinal Ruby / Carat	20	8,000	3	480,000
	Topaz / Carat	10	6,000	3	180,000
	Lippies / Carat	200	10	3	6,000
Indirect Materials	Diamond Powder	2	200		400
	Chromium Powder	3	400		1,200
	Wax (Copper , Aluminum)	1,000	1,000		1,000,000
	Cotton Buff	1	500		500
	Leather Buff	1	400		400
	Luster's (Polishing Agent)	1	25		25
	Spirit Lamp	1	100		100
	Table Lamp	1	1,500		1,500
Total Material Cost					2,840,125

Human Resources Requirements

There are two types of labour categories involved in gemstone post-collection production. Direct labour is required throughout the project from start to end to manage each and every activity. It is advised that this labour category should be managed by the owner, or his relatives who are local people, to save on their accommodation, food, travel and other living costs.

Skilled labour is essential for this business, although it is not very common in the district. The Rupani and Chasvi organizations are in the process of training local people in Chitral. The availability of the skilled labour should be ensured prior to starting a business. The cost of skilled labour may vary, depending on the number of people available.

The indirect labour can be hired when required, e.g. at the time of rough gems collection.

Category	Titles	Nos.	Months	Monthly Salary	TOTAL (Per Year)
Indirect Labour	Manager	1	12	20,000	240,000
Direct Labour	Skilled Labour	1	12	15,000	180,000
	Helper	1	12	6,000	72,000
Total		3		41,000	492,000

Overhead costs

The overheads are calculated on an 'assumption' (first year) basis: the cost for the next three years can be added with 10-20% increments. An estimated cost of transportation is added in the overheads. This will vary based on the type of vendors, suppliers and distribution channels adopted by the entrepreneur. The cost of transport can be included in the direct production costs.

Sr.	Items	Monthly	Annual	Remarks
1	Repair and Maintenance	1,000	12,000	
2	Electricity	1,000	12,000	
3	Telephone	600	7,200	
4	Transportation	25,000	300,000	
5	Depreciation	3,000	3,000	
6	Refreshment	6,000	72,000	
7	Rent	4,000	48,000	
Overhead per Product Unit		40,600	454,200	

Pre-Operating Expenses

The pre-operating expenses are required to manage the expenses prior to starting a business, i.e. registration, market searches, and surveys if needed. If the search for locations has already been done the cost can be reduced. For an existing business only additional promotion and expansion cost would be required.

Sr.	Items	No.	Rate	Amount
1	Survey			
	Market Search	1	30,000	30,000
2	Promotion (Banners, Flyers, Stalls)			
	Pena flex Banners	1,000	100	100,000
	Flyers for Outlets and Shops	2,000	3	6,000
	Visiting Cards	2,000	2	4,000
Total Pre-Operating Expenses				140,000

Profit Analysis

The profit is calculated on a one-year basis. The profit may increase from the second year, as most of the costs will be either reduced or removed - i.e. establishment, pre-operating expenses, fixtures, and assets.

Gross Sales		5,640,000
Less: Returns & Allowances	-	
Net Sales		5,640,000
Less: Cost of Goods Sold Materials	2,840,125	
Labour	492,000	
Overheard	454,200	

Promotion	140,000	
Gross Profit		1,713,675
Less: Administrative and Selling Expenses	-	
Operating Profit		1,713,675
Net Profit before Tax		1,713,675
Less: Estimated Income Tax		NA
Net Profit After Tax		1,713,675

Break Even Analysis

There are three stages to arrive at the break-even point.

1. BEP - Sales	$\frac{\text{Annual Sales}}{\text{Annual Sales}}$	x	$\frac{\text{Annual Fixed Cost}}{\text{Annual Variable Costs}}$	5,640,000	x	206,700	628,906	Rupees
		-		5,640,000	-	3,786,725		
2. BEP - Production	$\frac{\text{BEP Sales}}{\text{Unit Selling Price}}$					628,906	629	Units
						1,000		
3. BE on Investment	$\frac{\text{Net Profit}}{\text{Total equity x 100}}$					1,713,675	41.46	Profit Margin
						4,133,025		

LIST OF VENDORS AND SUPPLIERS OF MACHINERY AND EQUIPMENT

Machinery related to this business is mostly imported from Sri Lanka or China but there is only one local Trader in Pakistan who supplies Gem-related machinery. Contact Details are as under:

1. Ghani Engineering

Pabbi (Peshawar)

0321-975 2360

Vendors for Raw Material & Rough Stones

Sr. #	Name	Area	Contact #	Category	Product
1	Muhammad Saleem	KADO	0943-409206	Trader	Gems / Jewels
2	Maqsood Ahmed	Chitral	0320-9119309	Trader	Gems / Jewels
3	Shandur Jewels	Chitral	0310-5414737	Trader	Gems / Jewels
4	Mehboob Ali	Chitral	0344-9527920	Trader	Gems / Jewels