## **CHAPTER IV**

## Potential Sectors of State Economy

#### AN OVERVIEW

The state of Jammu and Kashmir in many respects has problems of isolation, backward and inaccessible areas, and lack of an industrial base and employment opportunities. However, the state is vested with a substantial water resource, mineral base, and is famous the world over for its exquisite handicrafts, handloom products, tourism, horticulture produce and cottage industry. While the state has enormous potential for the flourishing of various industries, it has lagged behind in the field of industrialization. The public sector units have generally failed to perform and the private sector has not flourished. Although the state has made sustained efforts, based on its industrial potential, to develop industry and elevate its economic standard, it has still to go a long way to find a place in the industrial map of the country. Therefore, it is imperative to identify and exploit the productive capabilities of the different regions of the state to trigger off the growth impulses, thereby facilitating the process of economic take-off. For promoting prosperity and ensuring equitable economic development throughout the state, the state government has been encouraging the flow of investments in areas with high employment potential and helping in utilizing local skills and raw materials to advantage.

The state government has identified certain thrust areas in the matter of industrial growth. The projects in these areas shall receive priority in respect of allotment of land, sanction of power and other clearance from high-level empowered committee as also in the matter of grant of incentives. These thrust areas are: electronics (including computronics and software), food processing including agro-based industries, floriculture, handicrafts, leather processing and leather goods, sports goods, forest-based industry, processing of aromatic plants and herbs, pharmaceuticals based on herbs, bulk drugs, processing, printing hosiery and made-ups, cutting and polishing of stones, gems and jewellery, precision engineering and others. A brief introduction to some of the important traditional and thrust areas is given in this chapter.

## HORTICULTURE-BASED INDUSTRIES

The state produces 10 lakh tonne of apple per annum besides other fruits like pears, cherry, plums, apricots, etc. There is ample scope for setting up of industrial units

for juice concentrate, jams, jellies and marmalades. However, it is pertinent to note that Kashmiri horticulturists have preferred to remain the suppliers of primary products rather than diversify into value-added finished products. The valley is also famous for production of saffron and dry fruits like almonds and walnuts. There is ample scope for setting up of processing units based on these fruits. Presently about 5 lakh families derive their livelihood from this sector of agriculture economy. Each hectare added to it, generates 500 mandays job annually and augments the family's income for 30 to 70 years. With an annual turnover of over Rs. 300 crore excluding the foreign exchange of over Rs. 80 crore, horticulture plays a vital role in the economic development of the state. This sector is the biggest source of income in the state's economy, next only to the agricultural sector. The salubrious climatic conditions of the valley are most suitable for the growth and development of not only the various types of quality apples but also a variety of other fruits including pears, plums, apricots, cherry, strawberry, grapes and various varieties of wild herbs. While enterprising entrepreneurs are successfully developing the straw farms in the neighbouring Punjab, not much has been done in this area in Kashmir even though the climatic conditions here are more conducive for growing strawberries than in any other state of India.

The state offers tremendous potential for export of various processed fruits and walnuts, honey, etc. With the extensive use of appropriate fertilizers, not only can the quality of the fruits be maintained and improved, but also protection from scab and various other diseases can be assured. With the use of modern technically improved packing, development of cold storages at various vantage points in and outside the state, better and faster transportation facilities, trucks with air cooled containers etc., there is no doubt that the fruit industry in Kashmir can get a great fillip.

## HANDICRAFT AND HANDLOOMS

The handicrafts industry occupies an important place in the economy of J & K. It is basically a cottage industry and provides direct and gainful employment to more than 3 lakh people and has the potential to generate more employment in future. The handicraft products have won worldwide acclaim for their exquisite designs, craftsmanship and functional utility. The woollen and silken carpets of the state remain unparalleled on the national scene for quality and design. The crewel embroidered pashmina, and embroidered raffal shawls, pattern of Kani shawls, intricate wood carving, production of flora design in paper machie goods, etc., are some of the world famous traditional crafts of the state. In fact, the Kashmiri craftsman possessing a unique talent for intricate workmanship is one of our most

important resources. This industry has a tremendous potential and has to be perceived with concern and with a precise understanding of its values. As an export-oriented industry, it has contributed considerably towards foreign exchange earnings worth crores of rupees annually. It is a cottage-based industry, which does not require heavy capital investment and heavy infrastructure such as machinery, buildings and power.

## TOURISM INDUSTRY

Tourism plays an important role in the state and is indeed one of the major contributors to the state economy. There are several tourist spots with breathtaking scenic beauty located throughout the length and breadth of the state that attracts thousands of domestic and foreign tourists. The picturesque beauty, large natural lakes, the snow clad mountains surrounded by thickly populated pine forests with rivers flowing through have made J & K as a prime tourist attraction. There are a large number of hotels, guest houses, lodges and houseboats providing lodging and boarding facilities to both domestic and foreign tourists. The tourist influx has, however, decreased considerably in the past one decade because of difficult circumstances prevailing in the state. Notwithstanding these problems, the state does possess a tremendous potential for the growth and development of tourism. However, much more remains to be done to exploit the tourism potential to the maximum extent. Keeping this in view, the government of J & K has declared tourism as an industry and a number of concessions and incentives have been extended. It has also been declared as one of the priority sectors by the state government and numerous developmental measures have been initiated to augment tourist flow into the state. In fact, as far as development of tourism in the valley is concerned, some effective strategies that will include proper marketing of tourism must be adopted. These strategies may include development of high altitude golf courses, canoeing, skiing, trekking, fishing and pilgrimages to places of religious importance. The state possesses tremendous potential in all these areas and it is high time that the same be explored as soon as possible so that more and more tourists attracted to the state.

## INFORMATION TECHNOLOGY

There is good scope for electronics, precision engineering industries and software development as these industries are less power intensive, low weight, low volume and high value items. Considering the expected growth of computer hardware and software industry, it has the potential to emerge as one of the major industries of the state. It can be said that the highly conducive climate, existing electronic complexes, etc., would provide a base to start new ventures. The state government

has established an electronics Industrial Estate Complex at Rajbagh, Srinagar and is in the process of setting up a Software Technology Park at Rangreth where necessary facilities for connectivity and fast transmission of data will be created to link Kashmir valley with global information highway. The up-linking facility available in this park is expected to meet the international standards for transmitting and receiving data. The park is also likely to have incubator facility for new entrepreneurs. As such, many electronics and computer-based industries can economically be established and it would provide the support of requisite infrastructure to attract leading national and international software concerns to establish their respective software development centers for global distribution of software under one umbrella.

## 1. HORTICULTURE

## **INTRODUCTION**

The peculiar geographical situation and inadequacy of infrastructure in Jammu and Kashmir has restricted the development of agriculture and the possibility of land productivity. The outputs of agricultural products are not increasing in proportion to the cost involved in the farming. The agricultural activity is, therefore, considered to be an uneconomic occupation. In the absence of non-availability of employment opportunities in other sectors, the workforce is forced to depend mainly on agricultural activities. In the context of stagnation in agricultural production, which is not helpful in creating an increasing level of employment opportunities in the region, horticulture is a viable option for exploration.

It occupies an important position in the farming system of the state. Besides, the state has suitable climatic zones for growing temperate, sub-tropical and tropical fruits throughout the year. Temperate fruits like apple, pear, peach, plum, apricot, cheery, walnut, etc., grown at elevation of 1000 to 3000 metres above sea level are important cash-fetching fruits of the state. These fruits not only supplement the diet of the local people, but also form an important item of export to other parts of India.

The Post-Independence era witnessed substantial progress in respect of production and area coverage under horticulture but still needs special attention. Fruit production in the state has increased to 11.05 lakh metric tons during 1999-2000 from mere 16,000 metric tons in 1953-54. Out of this, fresh fruit production accounts for 10.22 lakh metric tons. The area under cultivation crops has increased by 17 times. It has increased up to 2.19 lakh hectare in 2000-01 from a mere 12,400 hectare in 1953-54. The per hectare yield too has gone up to 5.08 metric tons from 1.29 metric tones during the period. Under the area expansion programme, over 44 lakh plants produced in government and private nurseries have been distributed among the prospective beneficiaries during 1999-2000. About 4.85 lakh estimated families are involved directly in fruit cultivation. According to the estimate of State Horticulture Department, around 20 lakh persons are, in one way or the other, being benefited by the fruit industry of the state. Apart from these achievements, this sector also faces certain challenges like the average land holding size (0.76 hectare) being small for the commercialization of the horticulture activity. Due to unavailability of packaging and processing facilities, 30 per cent of the total fruit produced get wasted. Inadequate marketing facility is also one of the reasons for low productivity. Through certain changes in the development perspective of the department of horticulture, this sector could become one of the important sectors in the state economy. The returns from the growth in the apple production should be one of the motivational factors for the growth of horticulture in the region.

## AREA UNDER HORTICULTURE

The growth and expansion of area under horticulture in the state has been high during the past three decades. Out of the total area under orchards in the state, approximately 90 per cent is concentrated in the valley, for the obvious reason of climate, and soils being conducive to the cultivation of a wide variety of fruits.

Table IV.1
Area under different land use type

Land use types	Area in 1000ha (1984 -85)	Percentage of area (1984-85)	Area in 1000ha (1998-99)	Percentage of area (1998-99)
Forest	658	27.19	658	27.23
Net area sown	722	29.53	734	30.38
Land put to non-agriculture uses	339	14.00	291	12.04
Barren land	227	9.37	291	12.04
Permanent pastures and other grazing Grounds	125	5.16	126	5.21
Land under miscellaneous trees and other groves	109	4.50	73	3.02
Cultivable Waste	143	5.90	139	5.75
Fallow other than current fallow	8	0.33	8	0.33
Current fallow	91	3.75	96	3.97

Source: Digest of Statistics, Jammu and Kashmir, 1999-2000.

The area under orchards is far less in comparison to the area under agriculture. During 1998-99, total area under agriculture was 30.38 per cent, however, total land under the orchards was only 3.02 per cent (Table IV.1). The data (Table IV.2) shows that still there is a huge area to be explored for horticulture. The agricultural land can be utilized for the purpose of horticulture, because the gestation period in the case of the major varieties of fruit trees is minimum 4-5 years. Moreover, the plantation of fruits trees along with crops like maize, vegetables, fodder, wheat and pulses does not affect crops during the gestation period. Even after the gestation period, some of these crops can be cultivated along with the fruits. Thus it is quite possible that even if the area under these crops does not increase or even remain stable, the area under fruits could increase.

Table IV.2
District-Wise Distribution of Area under Orchards and Vegetables

(Area in 1000 ha)

District	Orchards & Vegetables 1983-84	Orchards & Vegetables 1998-99
Anantnag	7.03	10.28
Pulwama	11.91	13.87
Srinagar	5.8	5.47
Badgam	5.34	7.86
Baramulla	14.58	20.27
Kupwara	4.76	5.22
Leh	0.31	0.29
Kargil	0.12	0.34
Jammu	2.16	1.37
Udhampur	0.28	0.48
Doda	0.73	0.51
Kathua	0.33	0.22
Rajouri	0.02	0.06
Poonch	0.07	0.06

Source: Digest of Statistics, Jammu and Kashmir, 1999-2000.

Most of the land available for horticulture is in Anantnag, Pulwama, Srinagar, Badgam, Baramulla and Kupwara (Table IV.2). In the case of Baramulla, Anantnag and Pulwama the area under orchards shows an increasing trend. According to the Godbole report, the area under orchards in the state was 31,000 acre in 1949-50. It had quadrupled to 1.40 lakh acre by 1970-71. These figures were, however, contradicted by the record of revenue department, which put the area under orchards at 34,000 acre in 1972-73. The discrepancy arose as large areas converted into orchards were still shown as fallow in the agriculture revenue records. However, Table IV.2 shows that from 1983-84 to 1998-99, there was a minimal increase in the total area. The estimates of agricultural census (1985-86) reveal that the total area under orchards has gone up to 1.48 lakh hectare; 0.64 lakh under apple, 0.33 lakh under walnuts, 0.17 lakh under almonds, 0.30 lakh under crops like cherry, peach, plum, apricot, etc., and 0.04 lakh under mangoes.

## **PRODUCTION**

The state has the largest potential for production of quality temperate horticultural crops. It has created a niche in production of apple, pears, and dry fruits i.e. almond and walnut. Among temperate fruits, apple, walnut and almond rank first, second and third respectively in area and production, covering 64.05 per cent, 27.31 per cent and 8.65 per cent of area and 909583, 86263 and 9879 metric tonne of production respectively (Tables IV.2, IV.3 and IV.4). Earlier, apples contributed a major share of total fruit production in the state. But recently a perceptible

diversification of fruit has been seen in the walnut cultivation, which has a very high export potential. The potential for foreign exchange earnings on account of walnut export is estimated at Rs.500 crore annually if production technology is further refined and updated according to international standards.

Table IV.3

District-Wise Production of Fruits for the Year 2001-2002

(Production in M.tonne)

Districts	Apple	Pear	Citrus	Mango	Other Fruits
Anantnag	161182	7138	0	0	660
Pulwama	121900	3999	0	0	0
Srinagar	36100	2798	0	0	598
Budgam	45537	4079	0	0	12
Baramulla	469300	2079	0	0	1780
Kupwara	60000	1134	0	0	329
Leh	3350	7	0	0	0
Kargil	350	5	0	0	0
Jammu	0	0	1892	2623	3071
Udhampur	2150	1370	2705	300	2211
Doda	6193	1864	55	0	377
Kathua	1180	2853	6041	3309	1111
Rajouri	125	125	727	825	784
Poonch	2216	7499	177	0	403

Source: Department of Horticulture, Srinagar, 2002.

Table IV.4
District-Wise Production of Dry Fruits for the year 2001-2002

(Production in M.Tonnes)

Districts	Walnut	Almond	Other Dry
Anantnag	32215	1444	0
Pulwama	13098	5780	0
Srinagar	3404	163	154
Budgam	6782	2458	0
Baramulla	7859	19	0
Kupwara	5710	0	0
Leh	105	1	0
Kargil	11	1	0
Jammu	0	0	0
Udhampur	2650	0	0
Doda	3729	8	0
Kathua	4000	3	0
Rajouri	798	1	22
Poonch	5902	1	3

Source: Department of Horticulture, Srinagar, 2002.

Tables IV.3 and IV.4 show that the districts Baramulla, Anantnag and Pulwama ranked first, second and third respectively in apple production, whereas the districts

of Anantnag, Kupwara and Pulwama ranked first, second and third respectively in walnut production. Production of almonds is concentrated in the districts of Pulwama and Budgam. Cherry production is concentrated mainly in district Srinagar for reasons of close proximity to main market, airport and processing units. Pear, plum and peach are concentrated in the districts of Budgam and Srinagar.

## EMPLOYMENT OPPORTUNITIES IN THE HORTICULTURE SECTOR

The cultivation of fruits is labour intensive and requires a significantly higher labour force starting from the stage of planting the trees to the point of its marketing. The manpower requirement in the cultivation and marketing of apples as well as field crops is met by employing paid workers and even the support of family members. This sector not only provides direct employment but it also establishes linkages of various kinds. Apart from labour and capital inputs, the sector generates demand for a wide variety of ancillary activities such as servicing of inputs, packing material, pruning and cutting of branches and transportation of fruit from orchard sites to the fruits centres in the towns and cities of the valley. These ancillaries, have in turn, generated wage employment particularly in horticulture belts. However, according to the estimates of the Horticulture department, around 20 lakh people are employed in this sector. In a study conducted by the Giri Institute of Development Studies, Lucknow, it is mentioned that the cultivation of apples is providing 77 per cent higher mandays of employment (95 per cent higher in case of paid workers and 71 per cent in case of family workers) as compared to the cultivation of agricultural crops. The proportion of paid workers in the cultivation of apple increases with the increase in the size of orchards. So there is a need to allocate substantial resources from rural development to the programmes of horticulture so that total area could expand area expansion, as rural development programmes are mostly oriented towards creating job opportunities. Horticulture development would prove to be the best investment in this direction as a one-time investment made in plantation programmes would continue to provide job opportunities for years to come.

## POTENTIAL FOR HORTICULTURE DEVELOPMENT

The demand of fruits both within and outside the state show the potential of the horticulture sector in the state.

Table IV.5
Year-wise purchase of Fruits

(1000 tonnes)

Year	Goods Purchas	ed from other states	Goods purchased from state by other stat		
	Fruits	Vegetable	Fruits	Dry fruits	Vegetables
1973-74	136.90	206.20	1598.60	90.80	13.00
1977-78	257.00	313.60	2515.10	81.80	3.50
1980-81	323.44	468.39	3821.70	94.95	0.41
1985-86	274.35	589.35	5424.75	92.22	-
1990-91	539.89	1013.47	3742.53	213.30	1.20
1992-93	681.99	1217.96	6196.86	282.64	5.05
1993-94	802.74	1284.38	7385.90	247.24	2.45
1994-95	971.22	1426.90	5649.50	332.20	1.21
1995-96	1001.16	1387.07	6870.00	280.00	1.27
1996-97	1001.81	1746.18	6853.97	207.26	2.10
1997-98	1182.38	1540.20	7143.46	105.28	1.54
1998-99	607.71	605.84	5769.34	69.85	0.5
1999-00	1415.41	973.47	7717.48	129.85	3.58

Source: Digest of Statistics, Jammu and Kashmir, 1999-2000.

The data on the imports and export of fruits shows that there is a huge demand of Kashmiri fruit. Table IV.5 also shows that demand is not only increasing out side the state but within the state also. The data shows few positive aspect of the demand and supply of the fruits. First, the consistent increases in the demand and supply of the fruits show that this region is completely suitable for horticulture. Second, despite the internal disturbance during the 1990s there is hardly any impact on the demand and supply of fruits. This shows that with very little initiative a lot can be achieved in this sector. Last, an important factor, which attracts the cultivator, is the highly favourable cost benefit ratio. The net returns per acre (in Rs) from the principal crops of the valley, worked out by various scholars/government agencies show that apple cultivation gives the highest returns as compared to paddy, i.e., Rs 7,515.38 for apple as against Rs.1,390 in the case of paddy. The net returns vary across the size categories of orchard holdings. The large apple orchards of the size of 7.50 acre and above yield higher returns in comparison to the marginal and small size orchards.

## STATE INITIATIVE

The state government encourages the diversification of agriculture and development of the horticulture activity. Provision of incentives ¾ credit at differential rates of interest; technical guidance; fertilizer; subsidies and marketing facilities ¾ have been the main government inputs in the sector. The state government has taken

certain initiatives in the area of diversification of horticulture by introducing highdensity apples and soft fruits like strawberry and currants around cities and towns. Recently, grapes have been introduced but the initial heavy investment does not tempt farmers to undertake its commercial production. However, better varieties suited to the Jammu climate need to be tried. Low chilling varieties of peach and pear also have potential in the area like Udhampur and Rajouri districts. The state government has distributed 1.30 lakh fruit plants to the small and marginal farmers free of cost under Nutritional Garden Scheme with the assistance from National Horticulture Board. The grower and local dealer-friendly Agriculture Produce Marketing (Regulation) Act, 1997 came into force from 16 March 2001. The Act helps the "mandis" in securing infrastructural development support from various central government agencies, besides improving gradation and remunerative returns to growers through domestic sales and export in consideration of free trade policy under WTO tie-ups. The state government has taken up initiative with NABARD to develop 19 markets; 17 satellite/rural markets, one terminal market and onegrain market. Of these, 11 markets are in Kashmir division and 8 in Jammu division. The state government has taken certain initiatives but a lot of initiative is still required in this area.

#### PRIVATE INITIATIVE

One of the important private initiatives taken in the horticulture sector is the marketing of fruit. Earlier the whole marketing of the fruits was done either by the state government or the middlemen. So the small and marginal fruits growers got a very small share of the profit. These kinds of arrangement also discourage the small growers to take any initiative in this sector. The new arrangement by individual fruit growers has shown a positive trend in terms of small planter participation and increasing the number of cooperative societies members.

In Baramulla, the number of these societies is maximum and in Kargil it is minimum (Table IV.6). The membership of the societies shows the unity of the fruit growers. If certain initiatives could be made to mobilise fruit growers to form cooperatives, which could be provided with the necessary credit and other inputs, it would solve lots of problems, which this sector is facing at present.

Table IV.6
District-Wise Numbers of Societies and members, 1999-2000

District	Numbers of societies	Membership (Cultivation)
Anantnag	35	2857
Pulwama	27	1769
Srinagar	9	612
Badgam	23	2095
Baramulla	58	4960
Kupwara	25	2192
Leh	-	
Kargil	4	129
Jammu	19	857
Udhampur	19	917
Doda	15	698
Kathua	8	385
Rajouri	6	383
Poonch	10	859

Source: Digest of Statistics, Jammu and Kashmir, 1999-2000.

The other area where private initiative has taken place is the establishment of private nurseries. About 256 private fruit plant nurseries have been established in far-flung areas of the state. This has helped the farmers to access their quality fruit plant requirement within their easy reach. A lot of private initiative is needed in the fruits processing and packing industry.

## CHALLENGES AND OPPORTUNITIES

It is observed from the above that the topography and agro-climatic conditions in the region limit the scope for the production of field crops. It was observed that available land in this agro-climatic region has been experienced to be economically more suitable for the cultivation of horticulture crops. The cultivation of fruits plants per acre of land provides a comparatively larger volume of employment opportunities to the local people than the cultivation of agricultural crops. A significant level of increase in the labour absorption in apple cultivation over the last few years also reflects the importance of horticulture for the overall development of the area.

There is a need to lay stress on the cultivation of other fruits as well. Therefore, the diversification of the kinds and varieties of fruits should be an important strategy for development. States like Maharashtra are continuously adding substantial hectares of land every year to their orchard areas. In this case, some districts like Kupwara, Doda and Poonch have, during the past few years, made considerable headway in resource allocations from rural development programmes to horticulture. In these

districts, the pace of development of horticulture has, therefore, increased almost three times. There is a need to allocate substantial resources from rural development to the programmes of horticulture development during the next Five-Year Plan. As rural development programmes are mostly oriented towards creating job opportunities, horticulture development would prove to be the best investment in this direction as one-time investment made in plantation programmes has the potential to provide job opportunities for a long period.

## STRENGTHS FOR THE DEVELOPMENT OF HORTICULTURE

- 1. The state has a variety of agro-climatic conditions ranging from sub-tropical, sub temperate, temperate and cold arid. Each agro-climatic region has its own potential to grow specific fruit, providing an opportunity to grow a variety of fruits during the major part of the year.
- 2. The soils are deep and rich in organic matter.
- 3. The demand for the temperate fruits from within the country is large and potential for export of fresh fruits to the neighbouring countries is enormous.
- 4. The state has a monopoly in growing some kinds of fruits like walnut, almond good quality pear, cherry, hazelnuts, pecan-nut, strawberry and kiwi fruits.
- 5. International market for walnuts, almonds and apples.
- 6. Farm labour is available in abundance.

# WEAKNESS THAT NEED ATTENTION FOR THE DEVELOPMENT OF HORTICULTURE SECTOR

- 1. Low productivity
- 2. Great variability in important crops like walnut and almond
- 3. Higher percentage of "off grade" fruit
- 4. Poor connectivity with the market place
- 5. Small and fragmented land holding
- 6. More than 90 per cent fruit growers fall in small and marginal categories and therefore, investment in modern infrastructure and technologies at individual level is not feasible.
- 7. Poor post-harvest management and absence of processing facilities.

# OPPORTUNITIES FOR INVESTMENT IN THE HORTICULTURE SECTOR

- 1. The diverse agro-climatic condition of the state offers great potential for growing a variety of fruits like mango, litchi, apricot, plum, peach to apple, walnut, almond and cherry.
- 2. The state has the monopoly in growing fruit crops like walnuts, almonds, cherries and good quality pears.
- 3. Better air connectivity with major consuming centres of the country offers potential for production and exports of perishable high value low volume fruit crops like strawberries and cherries.
- 4. Enormous demand for fruits like walnut and cherries in the international market because of excellent taste and flavour.
- 5. Availability of raw material in abundance for establishing agriculture processing industry.
- 6. The prospects and opportunities for growing organic food and fruit products for supplying to the higher strata consumers of the country are enormous particularly during summer months.

#### POLICY RECOMMENDATIONS

- 1. One of the important problems that the cultivator in the state is facing is that of proper marketing. The fruits growers market their produce through various channels. However, most of the small growers sell their produce to pre-harvest contractors. The most important sales channel is the forwarding agent, i.e., sales through commission agents. The co-operative marketing channels have not yet achieved an important place in marketing network in the state. So most of the marginal and small orchards depends on the pre-harvest contractors and commission agents, which reduce the marketing margin considerably. To ensure sustained employment and income in the horticulture sector it is essential for the state to provide proper marketing facilities to the cultivator. Government should promote the private initiative also in the marketing of the products.
- APEDA should be encouraged to set up an Export Promotion Zone to promote the export of selected fruits and vegetables including strawberry, mushroom and cumin seed.
- 3. The government should assume a lead role in the horticulture development and fruit processing industry that can build the confidence of the private investor.

- 4. The government should lay emphasis on research. Not much work seems to have been done in the temperate area. Only SKUAST has done some work. The state should establish collaboration with the institution, which developed certain technology, like tissue culture that is very important for horticulture development. Emphasis should be made on optimum used of land by using high-density apple crops.
- 5. The state should popularize the brand equity of the state as Kashmiri that can be used for all the products.
- 6. There is a need for improvement in the post-harvest handling of fruits.
- 7. The state should promote development of a growers association that can quantify the quality of the product into Grade A, Grade B, etc. that have an established trust in the market. The low variety of the fruit should be used at the processing industry.
- 8. There is a need to develop more nurseries in the state.
- 9. The department should take certain initiative for the development of new varieties of fruits like kiwi fruit, wild apricot, etc.
- 10. A new variety of cherries called "black cherry" from Italy has been tried on a limited scale. This variety along with other bigger and sweeter varieties of cherry from Europe needs to be introduced in the valley. Similarly large, luscious variety of peaches, particularly those from California (USA) and Europe need to be introduced in the valley.
- 11. A variety of apricot called "Hallman", brought from Central Asia was introduced in the Ladakh region many decades ago. This variety is quite high yielding and produces very sweet apricots. Unfortunately there are no facilities for processing or drying of apricots. As a result, the wastage of apricot which is a highly perishable fruit, is enormous. The farmers of Ladakh region dry the apricots in sun on rooftops, a process which is quite time consuming and not very hygienic. Better and latest facilities for drying up and processing of apricots need to be introduced in Ladakh.
- 12. In the Jammu region, particularly in the districts of Udhampur and Doda, olive cultivation was introduced a couple of decades ago. It was a success but here the problem of processing poses a formidable obstacle. Top work of olive was undertaken on wild olive trees that are found in Udhampur and Doda districts. A small-scale olive processing plant has been set up in Ramban by the state government but here again, for want of appropriate technology, the oil extracted is not very clear and free from residue.

- 13. A small area in the valley, Pampore has the virtual monopoly of saffron cultivation in the country. Kashmir saffron is a high value, low volume crop and the quality of saffron is among the best in the world <sup>3</sup>/<sub>4</sub> particularly because of its rich colour and flavour. Some tentative attempts were made to introduce saffron cultivation in Kishtwar tehsil of Doda district but without much success. There is need to increase saffron production by introducing saffron cultivation in areas adjacent to present saffron producing areas of Pampore.
- 14. The state produces very limited quantities of deera (zeera); the best jeera is cultivated at Gurez (Baramulla district) and Drass (in Kargil area of Ladakh region) This jeera is highly prized because of its flavour and fetches premium price in the Indian markets. There is need to expand area under jeera cultivation.
- 15. The climate of the state is ideally suited for production of exotic, high value vegetable crops like broccoli, asparagus and mushrooms. While asparagus thrives in the valley, broccoli and mushroom can be grown profitably in the Jammu region. What is needed is a planned, integrated approach which takes care of the production as well as marketing of these perishable, high value crops.
- 16. Another perishable but high value crop, the cultivation of which has been successfully tried in Jammu region, is strawberry. The state government should take a leaf out of strawberry cultivation and marketing undertaken in the states of Maharashtra (Pune region) and Gujarat (Saurashtra region).
- 17. It is ironical that a state like Jammu and Kashmir is deficit in vegetables and has to get vegetables from neighbouring Punjab to fulfill its requirements. The diversion to vegetable cultivation from traditional crop can easily increase (at least double) the income of the farmers. A vegetable belt needs to be created in Udhampur district in the neighbourhood of Vaishno Devi shrine which is visited by lakhs of pilgrim from all over India every year and which provides a ready market for vegetables grown.
- 18. The soil of Ladakh region is ideally suited for cultivation of "hops" used in brewing beer and production of potato seeds. Both these products are high value items. There is a ready market for hops in the neighbouring state of Himachal Pradesh, which has a couple of breweries while potato seeds will have a ready demand in Himachal Pradesh, Haryana and Western Uttar Pradesh.

- 19. Of late, the demand for herbs has seen a significant growth all over the world, due to the popularity of alternative systems of medicine. Both the Regional Research Laboratory Jammu and Defence Research Laboratory, Leh have done commendable work on herbs grown in the state and brought out literature on the subject. In view of the exponential growth in demand for herbs, private capital and enterprise need to be attracted in this sector. The state government should formulate a policy under which land could be leased out to prospective entrepreneurs for setting up herbal farms. Processing of herbs also needs to be looked into so that there is value addition in the state itself.
- 20. Since many fruits grown in the state as well as vegetables are perishable items, it is essential to reduce the time lag between their procurement and marketing. Since Leh, Srinagar and Jammu are connected by air there is need to work out arrangements with the airlines operating to this airport for transport of cargo to centers of consumption like Delhi, Chandigarh and Mumbai.
- 21. The farmers living in Ladakh region have successfully experimented with cultivation of vegetables in the glass houses (poly-houses). This can ensure supply of vegetables to metropolitan cities during off-season when vegetables can fetch good price. While from Jammu vegetables and strawberries can be transported in refrigerated vans (which need to be made available) the only viable mode of transport from Ladakh is air transport. Hence the need for working out an arrangement under fast transport system can be organized. If need be, initially, an airfreight subsidy for transport of such cargo may be considered.

## 2. HANDLOOM AND HANDICRAFT

## INTRODUCTION

Kashmir is known throughout the world as much for its arts and crafts as for its scenic beauty and bracing climate. Its crafts range from woollen textiles of fleecy soft texture of matchless excellence in weaving, hand-woven carpets of the finest warp and weft, to the exquisite designs worked on papier-mâché, wood work, silverware, etc. They are products of unique craftsmanship. The skill of the craftsmen and their capacity for intricate workmanship are assets, which can help development on a much larger scale. Moreover, as an export-oriented sector, it is instrumental in foreign exchange earnings worth crores of rupees annually.

In a state where handicrafts have already proved their worth and where there are vast areas so remote as to make it impossible for major modern industries to be set up, a vigorous policy for developing handicrafts can be specially rewarding. The capital investment in handicrafts is low, their employment potential high and their location can be in the remotest parts of the state.

Like handicrafts, the handloom industry is also the oldest traditional cottage industry in the state. The importance of this sector lies in the fact that it has enormous employment potential, it does not consume scarce resources, does not cause pollution and is environment friendly. The social cost benefit ratio, therefore of all investment in this sector goes up manifold. J&K is famous for the weaving of specialized fabrics like pashmina and kani shawls, silken, woollen and cotton fabrics.

## ARTS AND CRAFTS

The three regions of the state – Jammu, Kashmir and Ladakh – specialise in different crafts. The main crafts of the three regions are:

- 1. Jammu Basholi Painting, Calico Painting, Phoolkari.
- 2. Kashmir Carpets, Kashmiri Shawls, Wood Carving, Papier-mache, Chainstitch, Crewel, Namda.
- Ladakh Wood carving & Painting, Clay Moulding, Ladakh Pashmina Weaving, Ladakh Carpet, Thanka and Fresha Painting.

The following paragraphs discuss them in detail.

## TRADITIONAL RUGS

A *Namda* is warm, colourful, inexpensive floor covering made out of pressed felt. Rectangular, oval or round, embroidered in chain stitch, *Namdas* are found mainly in Srinagar and Kupwara district.

Gabba is the common man's carpet made on the outskirts of Anantnag town and nearby villages. Traditionally pieces of waste blankets were sewn together and embroidered. Today barrack blankets are used. Gabbas are embroidered or appliquéd in geometric patterns in brilliant primary colours. Srinagar, Anantnag and Baramulla are the main production centres.

The Handloom Development Corporation has fabrics such as *dosooti*, a heavy cotton with double twisted yarn, mostly used for Kashmir's famous crewel embroidery. *Samba* in the Jammu region produce cotton sheets called masnads or jajams popularly used for floor coverings. Quilt covers, bedspreads, table-linen, running fabric are also manufactured. Cotton durries are woven in Jammu.

## SHAWLS AND OTHER WOOLLENS

Spinning is done by the womenfolk of virtually every household and weaving in Kashmir and Ladakh is exclusively a man's work. Rural people wear *pattu*, a rough tweed-like material produced in a variety of weights and widths. In winter, heavy shawls known as *chadars* serve as blankets. They have a number of different designs, each characteristic of the area where it is made. Quality tweeds, using local wool prepared under commercial conditions have a wide range of designs. Outlets are in Srinagar at Poshish (state government handloom emporium) Pratap Park, Khadi Bhandars and Anjuman-e-Dastakar. Marino-wool shawls and blankets are also found there. Kishtwar has chadars using wool, coloured with local vegetable and mineral dyes in bold checks or natural shades. They are woven in Bhadarwah, Ramnagar, Lati, Dudoo, Basantagarh, Banni, Billawar, Poonch and Rajouri in the Jammu region.

Ladakh has at least one or two weavers in every village. A portable loom is usually set up outdoors in summer. Traditionally, vegetable dyes were used to colour the yarn.

Pashm and tus, the extra soft yarn from Ladakh, provides the foundation for

Kashmir's shawl industry. Ladakhis weave these into soft thick natural colour shawls and scarves, but spinning and weaving is finest in Kashmir. The elaborate *kani* shawl which was introduced by Zain-ul-Abedin and spanned through the Moghul, Afghan and Sikh rule are primarily found in the tiny village of Kanihama near Srinagar where young men revive the old *kani* tradition. Srinagar is known for the finest pashmina shawls.

The state government agencies have revived old colours and designs of classic embroidered pashmina shawls. Bani (Kathua district in the Jammu region) produces affordable and popular pashmina shawls. Pashmina fabric is referred to as 'Cashmere' in other parts of the world. Main production centres of woollen articles in Kashmir are Gurez, Tillel, Bandipur. Nadihal, Kazipora and Papchal (well known for kandidar or bordered chadars), Lolab valley, Badgam, Beerwah, Chadoora, Inder Gadodar, Pulwama, Tral, Shopian, Sophare, Handwara, Magam and Tarzoo.

#### **EMBROIDERY**

Embroidery is a commercial activity, organized professionally under the technical guidance of master craftsmen. Except for zari work, embroidery has been the prerogative of males. *Sozani* or fine needle-work done by a sozankar is the execution of the darn and herringbone stitch in silk thread on pashmina shawls, high quality *raffal* shawls, stoles, and furnishings. Satin stitch, chain stitch, buttonhole stitch, slanted darn stitch, stem stitch, herringbone stitch and the knot-stitch are some of the many stitches used in Kashmiri embroidery.

Though a popular occupation in all districts, embroidery is mainly concentrated in Srinagar and Badgam. Chain stitch is used on a variety of fabrics from hand-woven cloth made from double-twisted yarn called *dosootis* to wool, silk and cotton used mostly for upholsteries, curtains, soft-leathers, cushions, garments and floor coverings. It is also known as crewelwork. Excellence in wielding the needle created the *dorukha* embroidery in which the upper and the under-sides are both embroidered in different sets of colours, repeating the very same design to obtain a reverse mirror image. In the areas surrounding Anantnag in Kashmir, many people are engaged in embroidering raffal and pashmina shawls, *pherans* (a loose over gown worn by men and women), cotton dosooti fabric, gabbas, namdas. The traditional dogra embroidery of Jammu known as *phulkari* is rooted in Punjab and Haryana. Unfinsihed, home dyed silk floss is used as the embroidery thread.

## **CARPETS**

Introduced to Kashmir by Sultan Zain-ul-Abedin in the 15<sup>th</sup> century, the Kashmir carpet ranks amongst the finest in the world today. The weaver takes special pride in his ability to accurately reproduce Persian, Turkish, Turkman, Caucasian, antique Kashmir Moghul and Jaipur Moghul patterns. *Amlikar* or paisley shawl patterns were introduced in the early 1960s. Some of the well-known designs are:

- i) Mohtashan Kashan (a well known Persian design a central medallion with floral motifs all around),
- ii) Syrk Turkman (an antique Syrk rug named after the tribe who first wove these),
- iii) Shikargah (copied from a Moghul painting, depicting princes hunting in a jungle),
- iv) Kashmir Qum (Persian in origin, the design consists of assorted panels which are repeated),
- v) Turkman Princes Bukhara (based on a candlestand holder pattern),
- vi) Kashmir Moghul (a bold geometric and floral effect),
- vii) Kashmir Kashan (depicting the Tree of Life). Flowers, animals and birds are also sometimes introduced in Kashmir Kashan.

Carpets are woven in wool or silk and now artificial silk as well, in the districts of Srinagar, Badgam, Kupwara, Pulwama, Baramulla and Anantnag. In Srinagar there are outlets in Residency Road, Polo View, the Bund, Boulevard and around Dal and Nagin lakes. The Kashmir Government Arts Emporium and its branches all over the country have big carpet sections.

Ladakh produces quality carpets made of pure wool in glowing colours with distinct designs – dragon, snow-lion, and stylized crysanthemum and lotus motifs. Patterns are also taken from Buddhist iconography. Interesting geometrical patterns are also made with the border in diagonal lines. Carpets here have a distinctly Tibetan influence. *Tsukdan* is woven out of yak's hair in the Chang Thang area. Extreme climate the year round necessitates this floor covering which is spread out for ceremonies and feasts. *Tsuk-tul* is yet another type of floor covering in Ladakh. Woven strips of 9" width are stitched together to form a floor spread which can also be used as a blanket. The woollen yarn used is of local variety and is known for its luxurious warmth. It is made in Kargil and the adjoining villages. Carpets are

woven in the following districts - Srinagar, Badgam, Anantnag, Pulwama, Baramulla, Kupwara, Kathua, Udhampur and Poonch.

## SILK

Silk weaving was introduced to Kashmir by Maharaja Pratap Singh in the late 19<sup>th</sup> and early 20<sup>th</sup> century. In and around Srinagar, the small silk industry produces exclusive super-fine quality silk-chiffon, chinon, tabby, crepe, charmose satin, satin and habutti silk. Saris are sent out of the state for printing and are sold in most textile shops in the state. In Jammu villages' women make tasseled ornaments to bind their hair while men weave fine cords to tie their pyjamas.

## **METAL WORK**

Copper is still the most popular metal for household use in Kashmir. Plain, beaten, embossed or engraved, copper is used to make a variety of utensils both for daily and festive occasions. The major production centre in the valley is Srinagar. Various types of domestic vessels used for cooking and serving food are made from brass, copper and bronze. Besides cooking vessels, samovars, tumblers, bowls, cups, plates, trays, and ladles are made, often embellished with highly stylized motifs like *badam* (almond), *mehrab* (arch), chinar-leaf and intertwining vine.

Jammu is known for its traditional casting of large and small vessels, hukka bowls, statues and hand beaten sheet metal work. A large brass vessel called *sangla* made by pouring molten brass into mud-moulds is a dying craft, practised by a handful of artisans. Jammu city, Udhampur, Samba and Basholi practise this traditional craft.

The silver work of Kashmir is extremely beautiful and some of the indigenous patterns, like the chinar and lotus leaf, are of exquisite design. Handmade pieces of high quality workmanship are available in Srinagar. Articles include cups, bowls, plates, tumblers, trays, tea and coffee pots, dinner sets, goblets, boxes, vases, trinket boxes and cigarette cases.

Metalwork in Ladakh is a highly evolved craft. Religious objects are made out of copper and brass and embellished with silver. Silversmiths also make teapots, chhang-pots, bowls, ladles and other utensils that decorate the shelves of each kitchen. The best known silversmiths live in the village of Chiling in Zanskar valley. This area is rich in copper.

The blacksmiths of Ladakh are indispensable to community life. Known as *gara* they manufacture iron-stoves, locks and keys and also fashion conch-bangles. They also repair and manufacture agricultural implements. Their highly ornamental kitchen stoves are in great demand with the local population. Introduced in Kashmir towards the end of the 19<sup>th</sup> century, turquoise work mosaic in brass wherein tiny chips of dyed turquoise are set in the metal are also in great demand. Articles like ashtrays, jewellery, boxes, vases, necklaces, brooches, ear-studs and bangles are made with this technique.

#### **POTTERY**

The traditional potter of Ladakh earns a living by making the various mud bowls, jugs, tea kettles and braziers required in the peasant's home. The local barley beer, *chhang*, is stored in the *zoma*, a wide vessel, narrowing at the neck and opening again into a wide mouth. Likir village near Leh is a good place to see work in progress. Utilitarian earthenware is still in demand for domestic use, particularly in rural areas. Low priced and colourful clay containers are used to store water, set curds and cook vegetable and meat. The Kashmir potter also makes symbolic objects linked with the Shivratri festival, clay-containers for the kangri bowls and chillums containing smouldering embers for the hukka. In Srinagar the most durable and popular glazed pottery is manufactured at Rainawari. Commonly known as Dalgate pottery, these vessels are coated with a deep brown or green glaze produced with glass powder.

Rural pottery found in Charar-e-Sharif is painted red and blue and is occasionally decorated with white and green flowers. Mud-pots for storing water and cooking continue to be widely used in every village home. Aristocratic urban homes in Jammu use large earthen storage jars called math. Lightly decorated and fired at high temperatures, these vessels last almost a life-time and are used for storing wheat, rice, sugar and pulses.

## STONE CRAFT

Beautiful temples, idols and monuments testify to stone carving being an ancient craft in Jammu & Kashmir. Athwajan, close to Srinagar is known for its stone work, chiselled stone for paths, pillars, grinding stones and gravestones. Sculpted and inscribed stones in Ladakh speak of the deep-rooted tradition of this craft. Today, carving turquoise for the ceremonial Ladakhi headdress, cups and other items made

from precious stones, and shaping stones for various ornaments keeps the traditional stone carver busy. Cooking at extremely high altitudes is a lengthy process and a heavy stone lid serves as a pressure cooker. Lamps, frying pans, griddles and chhang-pots in stone are supplied via Nubra from village Thukmus near Siksa in Ladakh.

## **PAINTING**

Jammu was known for its celebrated Dogra style of miniature painting during the late seventeenth and eighteenth century. The art was rooted in the town of Basohli. Other places were Jammu, Poonch and Ramkot. Reproductions of these miniature paintings are available at Basohli where training now revives the art.

Scrolls of paper, painted over with beautiful images of the Buddha, his disciples, tantrik symbols and natural elements like fire, water, animal life, are known as tankhas in Ladakh. The monastries have a valuable collection of old tankhas. Tankha painting continues even today in centres at Leh. Mineral and vegetable colours are still being used.

## PAPIER-MACHÉ

A Central Asian craft, it consists of using paper pulp as a base to manufacture finely painted and lacquered ware. Substitutes like wood, cardboard and leather are also utilized for the typical surface decoration.

*Kari-i-Kalamandani* (the original local name of the craft) was heavily patronized by the Mughals. Mughal kings often commissioned entire communities of craftsmen to make gifts as well as decorative panels and other items for palaces.

A wide range of items for everyday use includes writing tables sets, dressing tableware, bangles, lamp stands, cups, bowls, vases, boxes, wall-plaues, panels, screens, cabinets, Christmas decorations, mirror-holders and frames. A traditional craft with the Shia community, the papier-mache craft has many outlets in Srinagar.

In Ladakh, masks are made out of paper pulp and painted in bright colours, personifying deities and evil spirits. They are essential to the plays performed in the monastries.

## **NOMAD CRAFTS**

Nomad Gujjar and Bakarwal women wear heavy silver jewellery. This has given rise to a number of silversmiths along their travel routes, who cater to the particular needs of the nomadic people and their traditions. Nomad jewellery made of brass, silver or white metal has a bold, dramatic quality typical of folk and tribal jewellery worn all over India. Jewellers in Riasi, Bardhawah, Kathua, Samba, Doda, Kishtwar and Basohli specialize in making ornaments worn only by Gujjars and Bakarwals. Much of the discarded jewellery is sold by weight and available in tiny jeweller shops in the bye-lanes of old Srinagar.

## **ORNAMENTS**

In the valley, Srinagar has been the centre for the manufacture of both precious and semi-precious jewellery. In the vicinity of the Third Bridge, silver and gold leaf makers, copper workers, silversmiths and goldsmiths make traditional ornaments. Other places are Mira Masjid, Rajouri Kadal and Kahnyar Bazaar. Jhulaka Mohalla in Jammu city still houses goldsmiths who repeat the traditional designs of Dogra jewellery. The rural women in Jammu wear silver anklets, the *chaunk phool* (a unique metallic cap or crown), bangles and the *taviz* (talisman) at weddings and villages fairs. Pure silver or silver alloys are used in the villages.

The Balti peasant woman, near Drass and Kargil, wears heavy and elaborate silver earrings. Beyond Kargil, where the influence is Central Asian, turquoises, large and tiny pearls, coral, agate and cornelia dominate. Goldsmiths make fine filigree charm boxes and amulets while the women themselves string stones together to make simple necklaces. Jewellery is made in the bye-lanes perpendicular to the main bazaar in Leh. Much of the jewellery sold here is Tibetan or Kashmiri and passed off as Ladakhi.

## STRAW, WILLOW AND GRASSWORK

Local grasses, straw and wicker are found abundantly in nature. The *kangri* is a small quaint earthenware bowl held in a frame of decoratively woven willow. Used constantly by Kashmiris in the winter months as a body warmer, the kangri is an integral part of wedding rituals for both Hindu and Muslim weddings. Charare-Sharif is known for its ornamental kangris for festive occasions. Lolab and Sopore make sturdy kangris.

A wide variety of willow basketry is carried out in Srinagar and its environs. The locality surrounding the famed Hazratbal mosque in Srinagar is dotted with shops where craftsmen produce sofa sets, tables, baskets, picnic hampers and lampshades. The craft is concentrated in Srinagar, Hazratbal, Soura, Haren and Shalabag (in Ganderbal and Anchar), Doru, Dyalgam, in Qoimoh in Anantnag town and at Charar-e-sharif in Badgam district.

Baskets, trays and various types of containers made of willow or wickerwork are also found in Baderwah and Doda town in Jammu district.

The reed mace, a swamp plant locally called 'pits' is used to make strong floor matting called *waggu*. The villagers of Lasjan, south of Srinagar, are perhaps the best matmakers. Used in houseboats and rural homes for added warmth under carpets. In Kishtwar and neighbouring villages of Sarkoot and Sangram Bhata, baskets, mats, containers and trays made of exceptionally lustrous straw are delicately decorated with bright woollen strands of threads.

Simple and functional baskets are made out of bamboo in the Kathua district in Jammu region. More recent production includes articles of urban interest - furniture, paper trays, lampshades, fruit bowls, flower vases, table mats, magazine racks. Sungwali, Nagari Parole, Airwan, Good and Kore-Punee villages in Jammu region produce mats, baskets, hand fans and other household articles from the dried leaves of palm trees.

In Ladakh, the local term for willow is *malchang*. Willow baskets are extensively used as pack containers in every rural household. Another local reed called chipkiang, growing close to the Indus river, is used to make pack-baskets.

## WOODWORK

Jammu and Kashmir, with its dense forests and wide variety of trees, has a rich tradition of woodcarving and architecture. *Khatumband* and *zali-pinjra* are two unique and traditional woodcrafts of Kashmir. In *khatumband*, excellent joinery and precise designing combine to create patterned ceiling panels. Look for this craft at Chattabal. *Zali-pinjra* (also known as *acchi-dar*) is a network of intersecting lines which make up latticed panels. Traditionally, windows, doors, railings, ventilators, ornamental partitions and screen were all done in *pinjra* work.

Walnut woodcarving is a common sight in contemporary workshops in Srinagar. A range of utilitarian and decorative objects – boxes, bowls, screens, panels, bedsteads, cupboards and cabinets – are made.

Anantnag and Jammu city are known for their lathe-cum-lacquer woodwork – ladles, rice measures, bedsteads and stools, spinning wheels, rolling pins, toys and child walkers. Thanamandi in Rajouri district is the main centre for *chikri* woodcraft. The most popular item is the comb. Used by the village women of Jammu and Kashmir, these combs were also a great favourite of Mughal princesses. The product range has been widened to include spoons, table knives, tooth-picks, bowls and cups and ashtrays. In Ladakh, joinery and handcarving are used to make furniture – low tables, larger tables and cupboards as well as bowls used for Buddhist rituals. All woodwork in Ladakh is painted in bright colours.

## **LEATHER**

A wide range of leather and suede shoes, gloves, coats and suitcases is all made by hand in custom—made designs. Jammu has long been famous for its zari-embroidered leather footwear. Artisans of Dhakki Sirajan in Jammu city and Machhedi and Bani in Kathua district are best known. *Paboo* are traditional Ladakhi boots made out of hessain cloth, used wool felt, coarse hair of the yak and goat, woollen tweed and leather for the sole which protect feet against frostbite. These shoes are made in Leh.

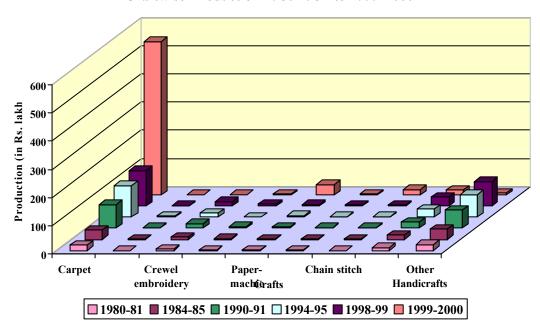
# PRODUCTION OF DIFFERENT HANDICRAFT AND HANDLOOM PRODUCTS IN THE STATE

Table IV.7 and Figure 1 shows the craftwise production in the handicraft sector between 1980-81 and 1999-2000. The overall production of the handicraft sector has been quite encouraging as the production in terms of rupees increased from 280 lakh in 1998-99 to 633 lakh in 1999-2000, thereby registering a growth of 126.07 per cent.

Table IV. 7
Craftwise Production in the Handicraft industry

Handicraft Products	Production (Rs. in lakh)					
Halluiciant Products	1980-81	1984-85	1990-91	1994-95	1998-99	1999-2000
Carpet	19.04	32.48	84.55	111.71	126.1	541.00
Namda	0.48	1.40	2.90	3.08	0.83	0.89
Crewel embroidery	4.40	7.41	16.70	13.67	15.56	1.50
Wood carving	0.96	2.53	5.65	-	6.84	3.08
Papier-mâché	1.11	1.97	4.50	4.69	5.40	36.20
Fur & Leather	0.91	1.28	1.80	2.09	2.36	2.00
Chain stitch	0.23	0.50	2.25	2.60	3.02	18.00
Woolen Shawls	10.02	14.47	22.05	27.61	31.14	16.25
Other Handicrafts	20.67	36.41	65.00	79.55	86.05	6.00
Total	57.82	98.45	200.00	245.00	280.00	633.03

Fig. 1 Craftwise Production 1980-1981 to 1999-2000



The maximum increase was in the production of carpets. As the table indicates, between a ten-year period from 1990 to 2000, the growth in carpet production was to the tune of 539.86 per cent. But the real spurt in growth was only after 1998-99 as the production figures shot up from Rs. 126.1 lakh to Rs. 541 lakh in 1999-2000, a growth rate of 329.02 per cent. Among the other crafts, papier-mâché and chain stitch production also increased between the same period. As the production figures show, between 1998-99 and 1999-2000, there was a seven-fold increase in

papier-mâché production and six-fold increase in chain stitch production. The production in crewel embroidery, woodcarving and woolen shawls declined during the same period. The decline can be partly attributed to the increased demand for carpets both in the international and domestic markets. Tables IV.8 and Figure 2 shows the production of handicrafts in different cooperative societies.

Table IV.8

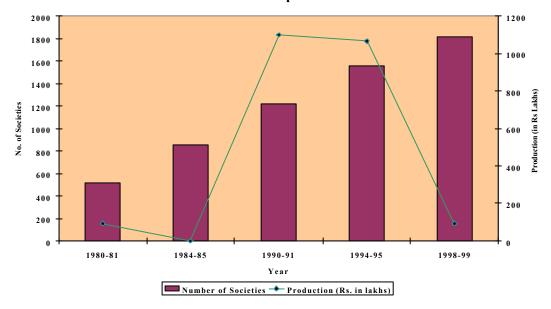
Number of handicraft industrial and handloom co-operative societies and Production

Year	Number of Societies	Membership (lakh nos.)	Production (Rs. in lakh)
1980-81	515	0.18	92.34
1984-85	849	0.24	193.85#
1990-91	1284	0.31	1097.17
1991-92	1381	0.37	1174.59
1992-93	1440	0.42	954.24@
1993-94	1498	0.49	796.41@
1994-95	1557	0.57	1064.29
1995-96	1561	0.66	241.89
1996-97	1605	0.55	156.12
1997-98	1734	0.10	63.47
1998-99	1810	0.09	93.25

Note: # and @ Excluding figures in handloom, Kashmir Division

Source: 1. Director Handicrafts, 2. Joint Director Handloom, Kashmir #, 3. Director Handloom Jammu, quoted in Digest of Statistics, 1999-2000, Directorate of Economics & Statistics, Planning and Development Department, Government of Jammu & Kashmir

Fig.2 Production of Cooperative Societies



As is revealed from Table IV.8 and Figure 2, the number of cooperative societies has steadily increased to support the artisans of the state. The production till 1994-95 was almost at par with the 1990-91 production figures. After 1995 the production of the cooperative societies declined drastically to 241.89 and further to 93.25 in 1998-99. No satisfactory reason can be attributed to this decline, but corrective or remedial measures which are practical and can be easily implemented should be taken up.

# EMPLOYMENT AND TRAINING IN HANDICRAFT AND HANDLOOM SECTORS

## Training & Employment in Handicraft Sector

The production of such a variety of crafts both in the handloom and handicraft sector means that there is vast potential for employment in these sectors. Due to their importance in the economic front, this sector has always been a priority sector for the J&K government. Lakhs of people are employed in different units. Table IV.9 shows the craftwise employment pattern of the state during 1980-81 to 1999-2000.

Table IV. 9 Craftwise Employment 1980-81 to 1999-2000

Handicraft Products	Employment (in lakh)						
Handiciant Floducts	1980-81	1984-85	1990-91	1994-95	1998-99	1999-2000	
Carpet	0.47	0.61	0.74	0.79	0.83	0.89	
Namda	0.02	0.03	0.05	0.06	0.08	0.08	
Crewel embroidery	0.16	0.23	0.27	0.31	0.34	0.35	
Wood carving	0.03	0.03	0.06	-	0.08	0.08	
Paper-mache	0.03	0.05	0.06	0.07	0.08	0.09	
Fur & Leather	0.02	0.03	0.04	0.05	0.07	0.07	
Chain stitch	0.01	0.01	0.03	0.05	0.06	0.06	
Woolen Shawls	0.37	0.43	0.51	0.70	0.81	0.82	
Other Handicrafts	0.33	0.38	0.49	0.65	0.74	0.74	
Total	1.44	1.80	2.25	2.70	3.10	3.20	

Source: Directorate of Handicrafts, quoted in Digest of Statistics, 1999-2000 Govt. of J & K.

Table IV.9 reveals that carpet weaving and woollen shawls are the two most important units where most of the people are engaged followed by crewel embroidery.

Realizing the vast potential for employment, the J&K government has undertaken large-scale training programmes for the youth in different crafts using their inherent skills in learning and creating while conserving the past. Since 1974-75, over one lakh young artisans have been trained in various craft skills such as papier mache, woodcarving, chain stitch, staple embroidery and other art and craft forms of the region. Of these, 40,000 were trained in carpet weaving only. The employment

figures only restate the fact. Craft Training Centres have been set up in far-off areas like Gurez, Tulel, and Chycholi, Shama, Yougma and Chitken in Ladakh and in the backward areas of Rajouri and Poonch. Besides popularizing the crafts outside Kashmir Valley, some important Kashmiri handicrafts have also been introduced in training centres in places like Doda. Table IV.10 shows the number of handicraft training centres and trainees trained during the period 1980-81 and 1999-2000.

Table IV.10
Number of Handicraft Training Centres and trainees trained

Year	Directorate of	Directorate of Handicrafts		Other Agencies		agencies)
i eai	Tr. Centres	TT(lakh)	Tr. Centres	TT(lakh)	Tr. Centres	TT(lakh)
1980-81	421	0.04	180	0.07	601	0.11
1984-85	459	0.08	293	0.05	752	0.13
1990-91	513	0.08	N.A	N.A	513	0.08
1994-95	535	0.08	100	0.01	635	0.09
1999-00	553	0.09	87	-	553	0.09

*Note:* Tr. = Training, TT = Trainees trained.

Source: Digest of Statistics, 1999-2000 Govt. of J & K.

The number of training centres has increased considerably during the period recording a growth rate of 24 per cent between 1980-81 and 1999-2000. The Directorate of Handicrafts has become important over the years, as the number of the training centres of other agencies has sharply declined. Every year, as Table IV.10 reveals, around 8 to 9 thousand trainees are trained in different crafts.

## TRAINING AND EMPLOYMENT IN HANDLOOM SECTOR

Appendix 1 gives the details of the training centres in different districts and the crafts trained. The total training centres are 506 in number. The number of training centres at present is maximum for stapple (77), followed by sozni (74), crewel (67), carpet (62). Besides the crafts mentioned in Appendix 1, training of a variety of other crafts is also given in the districts.

Table IV. 11

Number of Handloom Training Centres and Trainees Trained by the Directorate of Handloom

Handloom Training	197	7-78	198	4-85	199	0-91	199	4-95	199	9-00
Centres in	T.C	T.T								
Handloom Weaving	12	150	43	400	58	546	57	512	59	NA
Readymade Garments	-	-	20	256	22	332	22	233	22	NA
Calico Printing	-	-	-	-	-	-	-	-	-	-
Other handloom/Design Weaving Training. Centres	1	10	-	-	7	119	7	99	-	-
Total	13	160	63	656	87	997	86	844	87	480

T.C Training Centres; T.T Trainees Trained.

Source: Digest of Statistics 1999-2000.

In **Rajouri district**, a sum of Rs. 229.16 lakh has been incurred during past five years in the handicrafts sector. The department imparted training in Kashmiri and Dogri, Himachaly crafts to 3487 persons at its 23 training centres.

In **Udhampur**, under handloom sector, five centres of weaving and readymade garments are functioning. Stipend amounting to Rs. 3.07 lakh has been disbursed among 300 youth trained from 1996-97 to 2000-2001. Under the handicraft sector 1358 youth were imparted trining.

In **Doda**, 27 training centres including 10 advanced training centres are presently engaged in various handicrafts like, crewel, stapple, sozni phoolkari, wheat straw, and carpet making, etc. During 2000-2001, 370 females were imparted training in these crafts. An amount of Rs. 90770/- was realized by this sector with the sale of products during the last year, while Rs. 52.29 lakh was spent under this sector during the period.

In **Budgam**, Rs.18.19 lakh was approved during 2000-2001 for the handloom sector. An expenditure of Rs. 18.47 lakh was incurred comprising Rs. 0.60 lakh as capital expenditure. The production of fabric was of the order of 2.72 m. metres against the target of 3.85m. metres. The co-operative sector under handloom contributed production of 0.22 m. metres and unorganised sector contributed to the production of 2.50 m. metres during 2000-01. Kani shawl is a valuable art of the valley, which is produced only in Kanihama village of district Budgam. It is highly recommended that the kani shawl-producing centres are spread in the adjoining villages and the craftsmen trained accordingly. Co-operatives of local weavers in this direction will be of great help. This art was given a boost by deputing some groups to Delhi, on the expenses of Rural Development Agency, to attend the training programme of design making in the Kani shawl art. One group of officers/ weavers of the district was deputed in March 2001 to attend the training programme of self-help groups at Delhi, to boost the establishment of self-help groups to curb the unemployment problem in the district. The revamped scheme has yielded better results for income generation. Moreover, the private sector needs to be involved in the marketing of Kani shawls for better results.

In **Pulwama**, the handicrafts sector plays a very important role in generating employment potential for rural youth. The department is imparting training in different crafts and thus plays an important role in extending the base of the

handicrafts industry. Advanced training is being imparted in 9 training centres while elementary training is being given in 15 other training centres of the district. Stipend amounting to Rs. 8.50 lakh has been paid to 625 trainees in the 24 training centres during the last year. Out of 139 societies registered, so far 35 societies are actively functioning in the district at present. Against a production target of Rs. 2.16 lakh, goods worth, Rs 3 lakh have been sold after March 2001 in the district. The department is providing training to 650 trainees yearly and has trained 6061 youths in different crafts till now. Against an allocation of Rs. 1.17 crore, an expenditure of about Rs. 114.58 lakh has been registered by the department ending March 2001. The department has registered 231 artisans belonging to different crafts till March 2001. Besides, one training centre was established at Batnoor Trall for imparting training in crewel work during the year 2000-2001. As many as 25 candidates belonging to backward communities have already completed the said course.

In order to improve the economic condition of the weaker section and unemployed youth, the Handicrafts Department is imparting training to the rural youth in Kupwara in various crafts so that they can set up their own small-scale units. The department trained 120 young men or women in various crafts, registered 25 artisan units and set up one handicraft society during the year 2000-2001. The yearly expenditure on the Handicraft sector has gone up to Rs. 44 lakh during the year 2000-2001. The department sold various articles prepared in training centres to the tune of Rs. 50,000. During the year 2001-2002, Rs. 39.40 lakh were being spent on this sector.

In **Leh**, the handicrafts department runs training centres in thanka-painting, clay moulding, Ladakhi garments, Pappu shoe, *Namda*-felt making, silver filigree, crewel embroidery and carpet weaving. Pashmina shawl weavers and Tibetan carpet weavers mostly women, are provided various incentives and marketing facilities for their products; training centres are also being run. Handloom is a common household activity in the district since long. As the raw wool and Pashmina is locally available in a large quantity, handloom is an economically viable occupation. At present six training-cum-production centres are functioning in the district. Besides, there is one mobile training-cum-demonstration centre. The main function of these centres, apart from manufacturing Pashmina and Marino shawls, is to impart training to village artisans in weaving, tailoring and manufacturing hosiery items.

## MARKETING OF THE HANDICRAFT AND HANDLOOM PRODUCTS

The newly trained artisans are organised in cooperative societies as part of the self-employment programme and their goods are marketed through the Apex Marketing Federation. The Apex Marketing Federation was set in year 1978 to undertake marketing of handicrafts produced by the primary Handicraft Industrial Corporation societies affiliated to it and to provide raw material facilities to these societies.<sup>1</sup>

Table IV.12

Number of Cooperative Societies and their Sales

Year	Number of Societies	Sales (Rs. in lakh)
1980-81	515	118.06
1984-85	849	125.50
1990-91	1284	787.26
1994-95	1557	123.43#
1998-99	1810	56.71

Source: Digest of Statistics, 1999-2000 Govt. of J&K.

Table IV.12 shows the amount of sale by the cooperative societies from 1980-81 to 1998-99. It was only in 1990-91 that the sale was Rs.787.26 lakh. Since then the amount has declined and in 1998-99 it was only Rs.56.71 lakh. In order to promote the sale of handicrafts, craft bazars, melas, national expos are regularly organized at national and international levels as an annual marketing cover to the artisans and traders. The department also organises trade fairs as an annual feature at Pragati Maidan in New Delhi. In this international fair, the producers and entrepreneurs are provided opportunities to exhibit their articles to create better awareness of their crafts among visitors.

Table IV. 13

Domestic Sales through J&K Handicrafts (Sales & Export) Corpn

	1980-81	1984-85	1990-91	1994-95	1999-00
Domestic Sales (Rs. in lakhs)	222.51	265.76	NA	270.49	560.30

Source: Digest of Statistics, 1999-2000 Govt. of J&K.

The Jammu and Kashmir Handicrafts (Sales and Export) Corporation intensified its efforts to provide marketing cover to the artisans by way of selling their products through its 22 sales outlets located in different states of the country. The domestic sale as depicted in Table IV.13 has considerably increased, and the maximum increase was between 1994-95 and 1999-2000. The Corporation registered a sales

<sup>1</sup> Jammu and Kashmir Eighth Five-Year Plan, 1992-1997, Handicrafts Department.

turnover of Rs. 810 crore during 2000-2001 as against annual turn over of Rs. 560 crore in 1999-2000<sup>2</sup>. The improvement in the sales turnover is due to the new marketing strategy adopted coupled with the introduction of Management Information System (MIS) to monitor and evaluate the performance of the sales outlets.

To promote marketing facilities for the handicrafts/handloom products produced in the state, an Urban Haat is being set up in Jammu with central assistance to the tune of 70 per cent of the project cost. The Haat envisages provision of basic facilities such as setting up of stalls for display and demonstration of products, besides other basic facilities required by the buyers as well as sellers at one location. The work on this Urban Haat at the cost of Rs. 137 lakh was to be shared, the Government of India contributing Rs.95.90 lakh and State government's contribution amounting to Rs.41.10 lakh. The work is in progress at the Exhibition Ground, Jammu through JKPCC. The government of India in principle has also agreed to provide the financial assistance for the setting up of Urban Haat in Srinagar for the project at a cost of Rs.172 lakh; the proposal has been submitted to the Government of India.

The Ministry of Textiles/Development Commissioner, Handicrafts, Government of India have approved the setting up of Common Facility Center at Bagh-Ali-Mardhan Khan, Srinagar at a cost of Rs. 136 lakh; the central assistance would be to the tune of Rs. 95.20 lakh whereas the balance of Rs.40.80 lakh is being provided by the state Government. The Government of India has already released Rs. 47.60 lakh representing 50 per cent of the central share. With the setting up of the Common facility Centre at Srinagar, the facilities for carpet washing and drying, walnut wood seasoning and paper pulp making plant shall be provided to the artisans/craftsmen.<sup>3</sup> But the question that comes to mind is: when will this Common Facility Centre be operational, when it is not time-bound? Second, will the facilities provided be available to private artisans? If yes, at what cost?

## **EXPORT OF HANDICRAFTS & HANDLOOM PRODUCTS**

The handicrafts industry in Jammu and Kashmir occupies an important place in its economy and also makes significant contribution to its domestic and foreign exchange earnings besides providing employment to a large number of artisans and traders.

<sup>2</sup> *Kashmir Times*, 18 March, Monday, 2002 & Jammu and Kashmir Govt. website,' Measures underway to boost handicraft – Export Sample show rooms being opened shortly', *Newsline*, 18 July, 2001.

<sup>3</sup> Industry on fast revival in J&K, Jammu, 18 September, 2001, *Newsline*, The Official Website of Jammu & Kashmir Government, India.

The state enjoys a prominent position on the world map of exports with regard to handicrafts and carpets. During 1999-2000, the state exported a record value of handicrafts exports estimated at Rs. 575 crore including carpet export to the tune of Rs.449 crore. The handicrafts sector provides employment to over 3.30 lakh artisans annually and the overall handicrafts production has registered a high a Rs. 663 crore up to March 2000. In fact, the handicrafts sector has helped Kashmir to sustain economically during the worst-ever trauma of the decade-long militancy when the entire socio-economic order got shattered. This is evident from the fact that the annual carpet production showed a steep increase from Rs. 293 crore in 1996 to Rs. 557 crore in March 2000.

The Jammu and Kashmir Handicrafts (S&E) Corporation in 2000-2001 for the first time achieved an export of Rs. two crore. The Corporation plans to set up an Export sample showroom in Delhi and Srinagar besides printing of an export catalogue to boost export of handicrafts through its sales outlets. The Corporation also plans to participate in International Trade Fairs to increase export of handicrafts in a big way.<sup>4</sup>

On account of having the advantage of a flexibility of a small production run, uniqueness, innovation and adaptability, the handloom sector can contribute towards export earnings in a big way. Export of handloom has therefore been identified as a 'thrust area' for the overall development of the sector. In order to give substantial impetus to the export of handloom fabric, made-ups and other handloom items from the country, a scheme for Development of Exportable Products and their Marketing was introduced during 1996-97. Under the scheme, the assistance is available for developing exportable products, building up production capability for export and thereafter marketing it.

Since the inception of the scheme in October 1996, funds released for Jammu and Kashmir are as follows:

Table IV.14

Funds Released Under Scheme for Development of
Export of Handloom Items

(Rs. in lakh)

1996-97	1997-98	1999-2000	Total
2.54	8.75	2.64	13.93

Source: Ministry of Textiles website.

# **GOVERNMENT INITIATIVES AND SCHEMES**

The Jammu and Kashmir government has accorded priority to industrial promotion with the objective of bringing in speedy socio-economic prosperity in the state and generating ample opportunities for employment. The handloom sector provides employment to about 22,109 persons annually and on the average 500 persons are trained in handloom training centres. In order to give boost to the handloom activity in the state, the government has undertaken several welfare measures for the weavers and for the modernization of the looms. About 1,292 looms have been modernized and 1892 artisans/weavers brought under the scheme. The Government of India and state government have also given assistance of Rs. 7000 in rural areas and Rs. 10,000 in urban areas for the construction of work-sheds. Weavers also provided loans for the purchase of looms and modernization of looms at lowest interest rates possible. Other welfare schemes include thrift fund, scholarship to daughters of weavers under the education scheme and medical reimbursement under the health package scheme.<sup>5</sup> Under the Project Package scheme (PPS), need-based and areabased projects are formulated by the state governments to help weavers set up worksheds, selling outlets, dyeing units, modernization of looms, etc. During 1997-98, a total of 769 projects covering 6,499 weavers and costing Rs. 39.43 crore were sanctioned under the PPS.6

The Market Development Assistance (MDA), a centrally sponsored scheme with 50 per cent state contribution, has provided to the J&K State Handloom Development Corporation, two apex societies and 58 primary cooperative societies as a compensation for:

- (a) Interest subsidy;
- (b) Rebate discount/Consumer Incentives on non-Janta cloth, handloom products, and
- (c) Capital/ Margin money for setting up of showrooms, etc.

Moreover, the government has chalked out a time-bound programme to give a fillip to handloom sector in the state. About 100 new handloom cooperative societies and self-help groups (SHG) were to be set up by the end of 2001-2002 fiscal year, enabling handloom weavers to avail of wide range of special incentives under centrally sponsored *Deen Dayal Hathkargarh Protsahan Yojana* (DDHPY).<sup>7</sup> DDHPY

<sup>5</sup> Annual Plan 1999-2000, Govt. of Jammu and Kashmir, Planning and Development Department, Srinagar.

<sup>6</sup> Planning Commission, Annual Plan: 1999-2000, "Handlooms".

<sup>7</sup> *Daily Excelsior*, 'Handloom Research and Design Dev. Centres soon: Kamal', 7 February Thursday, 2002.

has been introduced to provide assistance for product development, infrastructure and institutional support, training to weavers, supply of equipment and marketing support both at macro and micro level in an integrated and coordinated manner for an overall operations till the end of the 10<sup>th</sup> Five-Year Plan. The scheme could be broadly divided into the following components and categories in order to suit the requirement of the beneficiaries who can avail of one or more component on the basis of their requirement and as per their eligibility:

- 1. Basic Inputs
- 2. Infrastructure Support
- 3. Design Input
- 4. Publicity
- 5. Marketing Incentive
- 6. Transport subsidy
- 7. Strengthening of Handloom Organisations.

The grant cost of the projects is to be shared in the ratio of 50:50 between the Centre and the State Governments. In the case of Jammu and Kashmir, the sharing would be in the ratio of 90:10 between the central and state governments.<sup>8</sup> Among other schemes, two handloom research and design development centres one each at Jammu and Srinagar would be set up during the 10<sup>th</sup> Five-Year Plan Period to develop new designs to suit the changing consumer preference and market trends. The same kind of initiative in the private sector should be encouraged, as it would be more useful and cost-effective. The handloom department has also introduced three-pronged strategies to check misuse of incentives provided to the weavers both in private as well as in the cooperative fold; introduction of thrift fund scheme, group insurance scheme and the special credit plan has also been extended to them. The scheme provides credit facilities to weavers to set up their units with only 10 per cent promoters' contribution and 90 per cent loan component from financial institutions.<sup>9</sup>

It is important to mention here that the J&K Handloom Development Corporation which was incorporated in 1981 with the object of promoting gainful employment to the weaver community in the state, has over the years helped in the growth of

<sup>8</sup> Ministry of Textiles, from website.

<sup>9</sup> *Daily Excelsior*, 'Handloom Research and Design Dev. Centres soon: Kamal', 7 February Thursday, 2002.

textiles and handlooms. The Handloom Development Department assists the weavers engaged in handloom sector through implementation of schemes which can be broadly categorized in three groups, viz., state sector schemes, district sector schemes and centrally sponsored schemes. These schemes are mainly aimed at the modernization of handloom sector and assisting the weavers in enhancing their efficiency and productivity through trainings; provision of credit and enhanced market access. <sup>10</sup> As such there is no evaluation method of the J&K Handloom Development Corporation, which should be introduced to enhance the professional capacity of the corporation.

The state government has intensified its effort to revive the world famous Kani shawl known as Kani Jamawar. While on government side, a centrally sponsored Rs.64 lakh project for the development of the Kani shawl has been launched through the J&K Handloom Development Corporation to document some of the old designs of Kani Jamawars prevalent in the 17th and 18th century, the Gul-e-Anaar Handloom Kani shawl Cooperative Society, Kanihama has, in the private sector, also revived about 24 antique designs of Kani Jamawars, since its inception in 1994. The society has been provided financial assistance of Rs. 13 lakh by the Union Ministry of Textiles for this purpose. The central government has also sanctioned a grant of Rs. 10 lakh in favour of the Gul-e-Anaar Cooperative Society for the production of 20 additional designs. The Society has so far produced 36 pieces of Kani Jamawars in various designs, out of which 28 shawls were sold for Rs. 66 lakh in Expo-200 held at Hanover, Germany.<sup>11</sup>

Handicrafts have a special socio-economic significance in J&K. Keeping in view the vast potential in handicrafts for economic activities like the generation of employment and revenue, the state government has launched various measures to encourage the growth of the handicrafts industry. Against an allocation of a mere Rs.19.50 crore in 1974-75, the budgetary allocation for this sector has been increased to Rs. 24 crore during 1998-99. The production of handicrafts crossed the Rs. 400 crore mark during 1998-99. There has also been notable growth in the state's export in recent years. The government launched several social security schemes for the welfare of artisans and traders related to handicrafts. The department has taken several steps to

<sup>10.</sup> Handloom Industry, Vision 2020, Kashmir.

<sup>11.</sup>Imperial Kani Shawl reviving fast: Kamaal, Centre provides Rs.13 lakh assistance for promotion of Jamawar. *Newsline*, Srinagar, 27 July, 2001, The official website of J&K Government.

<sup>12.</sup>Rather, Tariq A, 'J & K Handicrafts: Ingrained in Socio-Economic Ethos of India', Press Information Bureau, Govt. of India, Features downloaded from http://pib.nic.in/feature/fe0599/fl205991.html

facilitate the carpet manufacturers in procuring the raw material at cheaper rates. It has also launched a comprehensive scheme to register the artisans craft-wise. This will enable the department to recommend eligible artisans to banks and other financial institutions for financial assistance. The state government has introduced the sponsored schemes including health insurance, group insurance and work-shed-cum housing schemes. A new Rs.20-crore special credit plan for the financial assistance of the artisans and traders to start self-employment ventures was launched recently. Under this special programme, about 1,000 units benefiting about 6,000 artisans would be provided financial assistance in the form of 90 per cent loan and 10 per cent promoter's contribution. Artisans have been brought within an ambit of the cooperative movement and as many as 873 craft cooperatives engaging over 9000 craftsperson have been launched throughout the state. The cooperatives are being given regular assistance. Craft ware worth over Rs. 90 lakh was produced at these cooperative societies during the cooperative year 1997-98.

Jammu and Kashmir Handicrafts (Sales & Export) Development Corporation Ltd., set up in 1971, has been playing the twin role of providing market cover to the small artisans and petty *karkhanadars*; its emporia have been functioning as exposition windows for the traditional handicrafts of the state.

The existing schemes for the promotion of the handicraft industry by the Ministry of Textiles are as under:

- 1. Training for upgradation of skill of the existing craft persons and imparting skills to new craftpersons.
- 2. Design and technological development.
- 3. Setting up of Craft Development Centres and Common Facility Service Centres in identified craft pockets.
- 4. Exhibition and publicity.
- 5. Web-based Geographical Information System (GIS) on handicraft.
- 6. Setting up of Urban Haat.
- 7. Financial assistant to Export Promotion Council for Handicrafts (EPCH) and Carpet Export Promotion Council (CEPC).
- 8. Deputation of Indian Designers/Master craftpersons to reputed training institution abroad.<sup>13</sup>

<sup>13</sup> PIB Realease 'Scheme to Boost Handicraft Industry', http://pib.nic.in/archieve/lreleng/lyr2001/rjan2001/r29012001.html

# INVESTMENT OPPORTUNITIES IN HANDLOOM AND HANDICRAFT SECTOR

Some of the handloom areas, which offer a vast potential for investments, are.14

- Wool, the major raw material used by the state handloom industry and the woollen based textile items, with a variety of downstream products.
- □ Setting up of spinning mills to spin bulk quantity of good quality yarn.
- □ Setting up of dyeing, calendering and finishing facilities for woollens.
- □ Manufacturing units of fine quality woollen yarn.
- Developing an array of high-end dress accessories such as pashmina neck ties, scarves, mufflers, etc.
- Manufacturing of fine, lightweight tweed for exports. Inexpensive yet comparable to the best Scottish and Harris tweed, the Kashmir tweed can potentially become a benchmark for excellence.
- ☐ Marketing of haute couture items Kani Jamawar and Pashmina shawls, and accessories can provide tremendous opportunities for marketing companies, trading houses and individual entrepreneurs.

#### RECOMMENDATIONS

## Handloom Sector

A multi-pronged strategy is required to revive the handloom sector, which includes the following:15

- 1. Addition of new designs and product diversification needs to be carried out.
- 2. Productivity of weavers needs to be improved through enhancement of skills, introduction of more efficient looms and other related equipment.
- 3. Greater market access needs to be provided to the handloom products produced in the state through effective marketing strategy and appropriate incentives.

The National Handloom Development Corporation Ltd. (NHDC), the only national-level organisation in the handloom sector, in its endeavor to provide marketing infrastructure to the State Handloom Organization, has launched a project under

<sup>14.</sup> Handloom Industry, Vision 2020, Kashmir.

<sup>15.</sup> Handloom Industry, Vision 2020, Kashmir.

which marketing complexes in some major cities including Delhi, Jaipur, Hyderabad are being set up, where the State Handloom Agencies can acquire showroom premises. This could serve as an effective mechanism for marketing of the state's handloom products.

# Handicrafts sector

- The cluster approach of identifying various handicrafts units, of various crafts and craftsperson adopted by the previous state government for promotion and sustained development of handicrafts should be strengthened. These clusters should be developed for the purpose of design development, market assistance and production processes.
- The demand of the former Industries and Commerce Minister, Dr. Mustafa Kamal to the Central Silk Board for liberal assistance to re-engineer silk sector including establishment of a cocoon bank as recommended by the Godbole committee 1997 should be renewed. This will help the cocoon produced in J&K to be reeled within the state and yarn produced, used in the weaving sector. This facility would help the state to increase the value addition of cocoons both for yarn and converted fabrics.
- Conduct a feasibility study for setting up of a silk weaving factory in the state.
- □ Focus should be on brand promotion of the Kashmir handicrafts, product development, assessment and survey of new and existing markets, holding of exhibitions in international markets.
- Explore possibilities to establish modern show-windows at various International Airports across the country to promote handicrafts in a big way.
- □ The state government should, with the assistance of the Centre set up an Export Development Fund for J&K so that export potential in handicraft and handloom sectors is fully tapped.
- □ To cater to the working capital needs of small artisans, Artisan Credit Cards can be introduced.
- Interest-free loan to exporters for installation of computers for easier design development and colour combination for exports, duty-free import of silk yarn to promote Kashmir Silk rugs, setting up of modern facilities for spinning of silk and wool yarn in the rates of 50:50, 70:30 and 60:40 to meet the demand of mixed yarn carpets being recent trend in the international market.
- ☐ The carpet craft should be declared village and cottage industry as it is a major handicraft sector of the state and main source of foreign exchange.

# 3. TOURISM

# **INTRODUCTION**

Tourism is one of the world's fastest growing industries at present. In India, although tourism has the distinction of being the third largest export industry after gems, jewellry and readymade garments, it's share of the world's tourist traffic is a mere 0.51 per cent. It is more important in the case of Jammu and Kashmir. Tourism, besides boosting the economy of Jammu and Kashmir, can act as a major force for the conservation of its cultural heritage, and also provide significant opportunities for women and young people and offer educational training and skills development and protect and revitalize traditional arts and crafts. Looking at its economic returns and comparatively light investments and at the potentialities for tourism and limitations of adequate natural resources in other fields of economic growth, tourism in the state has always been an area of attention and is required to be encouraged further. According to one estimate, 30 per cent of the state's population are directly or indirectly connected with this activity subscribing 16 per cent of the state's domestic product.<sup>1</sup>

#### TOURISM IN JAMMU AND KASHMIR: PRESENT STATUS

Tourism has emerged as an important and one of the major contributors to the state's economy. There are various places of tourist attraction in the state being visited both by foreign and domestic tourists. However, much remains to be done to exploit the tourism potential to the maximum extent. Keeping this in view, the government of Jammu and Kashmir has declared tourism an industry, extending a number of concessions and incentives. The emphasis has been to revive the traditional tourist circuits including tourism marketing by involving local travel trade in direct marketing through the State Tourism Department.

### **TOURIST ARRIVALS**

The boundless beauty, snow-clad mountains, large natural lakes surrounded by thickly populated pine forests with rivers flowing therein have made J&K state a prime tourist attraction place. Till 1989, tourism had been the major economic activity of the state. Tourism activities in the state were concentrated around Kashmir Valley, with few visiting Ladakh and yet fewer interested in Jammu. But due to terrorist activities within the Kashmir valley since 1989, tourist inflow received a major setback. This has affected the economic stability as well as

employment opportunities of its population. The government of Jammu and Kashmir explored the possibilities of its tourism revival and concentrated on Ladakh. Further, religious traffic to Jammu went up from a few thousands to above 4 million in 1996. The change in tourist inflow has been presented in Table IV.15.

Table IV.15
Tourist Arrival in Jammu and Kashmir 1988-2002

Year	Kashmir Valley			Ladakh				Vaishnodevi		
	D	F	T	D	F	T	Amarnath	State	O. St.	T
1988	662097	59938	722035	8608	16256	24864	96055	259891	1732764	1992595
1989	490212	67762	557977	6689	16079	22748	95238	262691	2049310	2312001
1990	6095	4627	10722	396	8342	6738	4824	395202	1774000	2169202
1991	1400	4887	6267	1041	8014	9055	15599	439722	2711588	3151310
1992	1175	9149	10324	2438	13580	16018	54638	445580	3081709	3527289
1993	-	8026	8026	2000	12401	14401	56000	461443	2907302	3368735
1994	500	9314	9814	2080	15369	17449	37000	471101	3234844	3705945
1995	322	8198	8520	5594	12391	17985	60000	549778	3482349	4032127
1996	375	9592	9967	3537	13036	16573	120000	582213	3753319	4335532
1997	7027	9111	16131	3991	12810	16801	79035	495165	3939085	4434233
1998	99636	10247	109883	6792	15238	22030	149920	540453	4081639	4622097
1999	200162	17130	217292	1905	96669	11574	114366	635042	4033298	4668340
2000	104337	7575	111912	6217	11825	18042	173334	-	-	5109575
2001	66732	5859	72591	4260	15439	19699	119037	-	-	5056919
2002*	7993	1015	9008	87	361	448	N.A	-	-	1053771

Note: D - Domestic; F - Foreign; T - Total; O.St - Outside State

Source: Tourism Department J & K.

As Table IV.15 reveals, the potential for domestic tourism has grown substantially during the last few years. The favourable climate, particularly during summer months, has a supplementary impact in increasing the tourist traffic to the valley. With the development of winter sports at Gulmarg and Pahalgam, the number of tourists visiting during the winter season is also increasing considerably.

An important feature of the domestic tourism sector is its contribution to national integration and creation of a harmonious social and cultural environment.

## ADVENTURE TOURISM

The main thrust since the Ninth Plan is adventure tourism in tourist identified areas in J&K. Adventure tourism offers an excellent option for undertaking a large number of activities such as mountaineering, trekking, skiing, rafting, canoeing, mountain-

<sup>\*</sup> Tourist arrival figures for the year 2002 is up to May for Kashmir Valley, up to April for Ladakh and Vaishno Devi.

<sup>1</sup> Jammu & Kashmir, Draft Ninth Five-Year Plan 1997-2002

biking, hag-gliding, para-sailing, heli-skiing, etc. The areas developed for adventure tourism are Sonmarg, Gulmarg, Aru (Pahalgam), Suru valley (Kargil), Stock (Leh), Patnitop, Mansar.

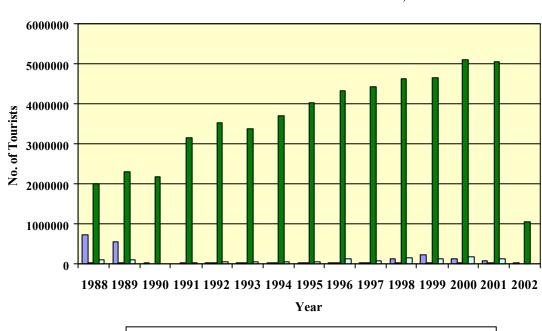


Fig.3

Tourist Inflow in Jammu and Kashmir, 1988-2002

During the Eighth Plan period, J&K Tourism Department was able to acquire good quality equipment of international standard for these activities. However, activity has remained at an introductory level and has not developed to the level commensurate with the scope available in the state.

■ Kashmir Valley ■ Ladakh ■ Vaishnodevi □ Amarnath

# **PILGRIM TOURISM**

Pilgrim tourism in the state has also registered considerable improvements during the last few years (Table IV.15). There are a number of pilgrim spots which generate traffic from both within and outside the state. Mata Vaishnodevi shrine in Jammu, famous Sufi Shrines in Kashmir and the Holy Amarnath Cave are important centres of pilgrim tourism. Ladakh has proved to be a very important tourist destination for foreigners because of the centuries-old Buddhist monasteries, which are fully functional and active at present. The J&K Government has taken the initiative to combine pilgrim traffic with leisure tourism. For example, the visitors to the famous

Shrine of Baba Rishi have been going to Gulmarg and using the facility of Gondola Cable Car.

# TOURISM INFRASTRUCTURE

This comprises the primary infrastructure which directly serves tourism and is largely oriented towards it, and the secondary infrastructure of social amenities which, besides other things, serves tourism as well.

The primary infrastructure consists of five principal components from which income from tourism is generated, viz;

- 1. Hotels, providing accommodation to tourists; in case of the valley, houseboats also provide tourist accommodation.
- 2. Restaurants, providing food and beverages.
- 3. Tourist transport system, providing facilities for internal sightseeing and long-distance travel.
- 4. Boutiques, selling goods of interests to tourists other than goods of daily use like toiletries, food articles, etc.
- 5. Entertainment, leisure and sports facilities.

### HOTELS AND RESTAURANTS

Hotels are by far the most impressive and easily noticeable component of any tourism infrastructure. This can be seen from the fact that almost all the incentives for tourism are directed to hotels.

Jammu city offers a variety of accommodation options for visitors, ranging from luxury hotels to humble lodges. Hotels are divided into different categories among which the A category or the western style hotels in Jammu are: Hotel K.C. Residency, Hotel Asia, Hotel Ashok, Hotel Hari Niwas Palace, etc. There are also more than 10 B-category hotels and a number of C-category hotels spread throughout the city. There are 229 unregistered hotels in Jammu. Among them, 33 are purely restaurants, serving different kinds of foods. There are also a few hotel-cumrestaurants in the city. There are also *dharamshalas*, viz., SMV Shrine Board's Vaishnavi Dham near the railway station, Gita Bhawan, Agarwal Dharamshala, Hari Bhawan, and Vinayak Dharamshala.

In Srinagar there are hotels to suit every requirement in terms of price, location and facilities. The most desirable location is the Boulevard, which overlooks the Dal Lake. Dalgate is fairly central for shopping and nearest to the Tourist Reception Centre. It has mostly budget accommodation. Some good hotels are also located in Sonawar and Rajbagh, which are largely residential areas within 2 km from the Tourist Reception Centre. Lal Chowk in the city's centre has several medium category hotels, mostly preferred by visiting traders. The J& K Tourism Development Corporation's hutments at Cheshma Shahi and Pari Mahal are also attractive for those with their own transport.

Many tourists are attracted to Srinagar by the charm of staying on a houseboat, which provides the unique experience of living on the water in a cedar-panelled elegant bedroom, with all the conveniences of a luxury hotel. Srinagar's thousand or so houseboats are moored along sections of the Dal and Nagin Lakes and River Jhelum, each decorated fancifully and named romantically. The state tourism department has classified the houseboats into five categories as follows:

Table IV.16
Tourist Accommodation in Houseboats in Kashmir Valley

Houseboat Category	No. of Houseboats	Dal Lake	Nageen Lake	River Jhelum	Naseem Bagh	Other Locations	Total No. of Rooms
Deluxe	349	264	76	5	4	-	1007
A-Class	129	89	28	10	1	1	310
B-Class	124	85	17	16	-	6	299
C- Class	134	78	9	32	-	15	306
D-Class	351	186	43	79	-	43	772
Total	1087	702	173	142	5	65	2694

Source J&K Tourism Department.

Leh offers a variety of accommodation to suit almost every pocket or preference. Most hotels are family-run establishments and as such, the services are more personalized than professional. Hotels are classified into A, B, C and economy category while guesthouses fall under Upper Medium and Economy class. The guesthouse is a less formal facility offering rooms in a part of a residential house or its annexe, where the guests can share the family kitchen for meals. Apart from low tariff offered for accommodation ranging from very good to merely basic, the guest house system also provides an opportunity for the tourists to see and experience Ladakhi life from the inside. In Leh a dak bungalow guesthouse at a cost of Rs. 80 lakh is under way for providing better infrastructure to the visiting dignitaries.<sup>2</sup>

<sup>2 &#</sup>x27;Leh to have dak bungalow guest house', *The Kashmir Times*, Friday, 12 July, 2002, p.11

In the newly opened areas of Ladakh – Nubra, Changthang and the Drok-pa area – tourist infrastructure is not yet adequately developed. The state tourism department has started development of accommodation facilities like tourist complexes and hiker's huts at various places in these areas. However, in some of these places, especially in the Nubra valley, tourists can stay as paying guests with some families who have set up paying guesthouses in their homes under a state government-sponsored incentive scheme. Tented camps are also available in the Nubra valley and in Tso-moriri Lake during the summer months.

# TOURIST TRANSPORT SYSTEM

The State Road Transport Corporation has been operating a fleet of luxury coaches both for transportation as well as for sight-seeing of various resorts. There are a large number of taxis catering to the upmarket tourists. For local transport, ponies, auto rickshaws, bikes and bicycle are also available. Cycling is an extremely pleasant way of getting around, especially as the valley is fairly flat. But the transport sector, both in the form of coaches as well as taxis does not come up to international standards. There is a lot of scope for development.

#### SHOPPING AND ENTERTAINMENT

In Jammu, in the crowded streets of Raghunath Bazar, among the age-old dry fruit shops, one suddenly finds designer boutiques that display the very latest in fashion and fashion accessories. The main bazaars, Vir Marg, Raghunath Bazar and Hari Market are famous for Kashmiri handicrafts, traditional Dogra jewellery and various dry fruits, chiefly 'Akhrot' (walnuts). Jammu is also known for the superlative quality of Basmati rice, 'Rajma' (red beans), 'Ampapar' (dried and candied mango peel), 'Anardana', (dried pomegranate seeds) and 'Barfis' (milk sweets).

Apart from shopping, tourists can also visit a number of cinema halls, (Jewel, below Gumat; Indira, Canal road; Swaran, Apsaa, Gandhi Nagar; Hari, Raghunath Bazar; K.C., Shakuntala, B.C. Road; Amba, Janipur; Tiger, Satwari), Clubs (Amar Singh Club, near Bikram Chowk; Jammu Club, near Tawi Bridge) and auditoria (Abhinav Theatre, Canal Road) where cultural programmes and plays are staged. Tourists can also avail the following facilities for entertainment:

- 1. Swimming: Hotel Asia, Jammu Tawi has a swimming pool which can be used by non-residents on a temporary membership basis. Swimming facilities are also available at Hotel Jammu Ashok and the Sports Stadium, Jammu.
- 2. Tennis: Jammu Club offers temporary membership for playing tennis.

- 3. Indoor Sports Complex: This complex at the Maulana Azad Stadium offers facilities for badminton, basketball, volleyball, table tennis and roller skating. Temporary membership is available.
- 4. Mini-Stadium, Parade Ground: This complex offers facilities for handball, football, hockey and volleyball. Equipment can be hired on the spot.
- 5. Fishing: River Tawi is famous for a variety of fish like Mahaseer, Catfish, Labio, Mahi, etc. Permits for fishing can be obtained from the Deputy Director, Fisheries Department, Jammu.

In Srinagar, the best things to buy are the handicrafts, carpets, shawls, papier mache used for making vases, bowls, trays and a number of other products all painted by expert craftsmen in lifelike images of kingfishers, chinar leaves and other motifs, baskets, cricket bats, saris, items made from walnut wood, etc. Food products include saffron, walnuts, almonds, shah zira, kashmiri chillies and honey.

For the keen shopper, Kashmir is a handicraft lover's delight. Beauty abounds in Kashmiri artifacts: papier mache, lacquered and painted in floral designs, wood carvings & screens, carpets soft and fine in typical oriental designs, silks, woollen shawls embroidered in traditional paisley and crewelwork of great beauty. Few places in the world offer such a rich variety of skilled craftsmanship as in a place as small as Kashmir.

The bazars of Srinagar are dotted with handicraft stores and shops, almost like an Arabian Night's tale. And the street vendors are everywhere, adding their own colour to this picturesque setting. There is a whole string of government handicraft emporia scattered around Srinagar, but the main one is housed in the fine old British Residency building by the Bund. The flashiest shops are along the Boulevard by Dal Lake. The Bund also has some good interesting shops, including Suffering Moses with high-quality goods. Shikaras patrol Dal Lake, loaded down with goodies. But entertainment in Srinagar has come to a halt as cinemas and theatres are closed due to threats from Islamic militants and very few people are seen on the streets after dark.

Shopping in Ladakh can mainly be done only in Leh. This city has shops catering to all needs. Most of the shops are handicraft shops spread all over Leh. There are a couple of provision stores on Fort Road and some around Old Road.

Entertainment around Leh includes a video show 'Ancient Features' by Ladeg and a cultural show by the Cultural and Traditional Society, behind the Shamshu complex in Port Road, Leh.

# Box 3: A Tourist Paradise in the Shadow of the Gun

Yeh chand sa roshan chehra, zulfon ka rang sunehra....., the song from the film Kashmir ki Kali will be recalled by any Hindi film music buff. Few may remember that the song was shot on the Dal Lake, Srinagar. But Ghulam Rasool, a shikara (houseboat) owner on the lake, can never forget it. He saw the shoot when Shammi Kapoor danced and twirled around Sharmila Tagore. That was in the 1960s. Today Rasool, 65, takes his shikara to Dal Lake almost every day but there is no Shammi Kapoor, no Sharmila Tagore, no new film shoots and no tourists.

Tourism and film shooting in Kashmir has collapsed, he says. 'There was a time in the 80s when people had to take an appointment with me, but today nobody bothers to visit our paradise'. There used to be a hotel on Char Chinari (a small island in the middle of the lake, now fully manned by Border Security Force personnel) but that was blasted by militants, Rasool says with sadness.

Security personnels are seen guarding everywhere, e.g, the Hazrat bal shrine or the tomb of Sheikh Abdulla.

Not far away at Lal Chowk is a taxi stand. Here Abdul Karim's future is also as uncertain as Rasool's. A proud owner of six tourist cars once, he is making ends meet with only one today. He says, 'there used to be thousands of people wanting to go to Pahalgam, Gulmarg and other tourist destinations from Srinagar, but now hardly anybody comes'.

Banks in the state are also pitching in by offering locals soft loans to start businesses. They have already distributed nearly Rs. 250 million in the last two years. Says Fayaz Ahmed, a houseboat owner, 'there are nearly 1200 houseboats in Srinagar, and everyone is losing money. There seems to be no end to our grief'.

Quoted from Syed Firdaus Ashraf's article on A Tourist Paradise in the Shadow of the Gun from the Internet.

# **GOVERNMENT INITIATIVE**

In order to give a boost to foreign exchange earnings, employment and income generation through tourism activities, the Government of India has in the Ninth Plan granted Export House Status to tourism units. The grant of Export House Status (1998) entitles the tourism units to get all the benefits that are available to recognized export houses.

The Ninth Plan also diversified the tourism product by encouraging rural and village tourism, pilgrim and spiritual tourism, adventure and eco-tourism, indigenous and natural health tourism, heritage tourism and youth and senior citizens' packages.

The main role of the Directorate of Tourism, Jammu and Kashmir the main developmental, promotional and regulatory arm of the J&K Government, Department of Tourism, consists of:

- Overall planning and execution of schemes for the development, upgradation and improvement of the tourism infrastructure in different parts of the state.
- □ Support to the private sector industry in the form of incentives for setting up various tourist facilities.

The government of Jammu and Kashmir has formulated a special package for the revival of tourism in the valley. It has initiated many schemes for the revival and development of the tourism industry during 1999-2000. Soft loans will be provided for reactivating tourism units in the private sector such as houseboats and outright investment subsidy for setting up popular units at lesser-known areas of the state. Rs.11.47 crore is to be utilized under this scheme to reactivate infrastructure in the Kashmir Valley such as roads at tourist resorts in Gulmarg, Pahalgam and Kokernag. Rs. 50 lakh will be utilized on strengthening communication facilities for installation of computers and on setting up Website and wireless networks. Rupees 4 crore will be spent on improving the water supply at Gulmarg and Pahalgam.

Another tourism-related scheme envisages organizing familiarization tours of officers of the Department, travel agents, journalists and tour operators besides encouraging popular TV channels for shooting their episodes in Kashmir. An amount of Rs. 2.40 crore is being spent under this scheme. Rs. 30 lakh has been earmarked for organising winter games in Gulmarg. Besides, Rs.5 lakh is to be spent on holding a National Artist Camp at Gulmarg. This is a centrally sponsored scheme.<sup>3</sup>

For its effort to promote travel and tourism in Jammu and Kashmir, the state government was awarded the 'Outlook Traveller – TAAI award for excellence 2001'.4

In the future tourism strategy, the role of the state is that of the facilitator/motivator. An outlay of Rs.7205 lakh was proposed for upgradation of basic infrastructure in

<sup>3</sup> Rather Tariq A. Tourism Revival in Kashmir, PIB Release, From internet.

<sup>4</sup> Official website of J&K Government, 19 September, 2001.

different tourist areas of the state during the Tenth Five-Year Plan and Rs. 1635 lakh during the following Plan year, i.e., 2002-2003. In order to fully exploit modern communication and computerization facilities, an outlay of Rs.200 lakh during the Plan period, and Rs.20 lakh during 2002-2003 was proposed.

# REVIVAL OF TOURISM

Revival of tourism presupposes reactivation of tourist infrastructure, which has remained idle for the past 10 years, and has started disintegrating due to disuse and lack of maintenance. Most of the tourist units in the valley require renovation and refurbishment. The state government has already framed a package for the revival of tourist infrastructure, the broad components of which are:

- (a) Grant of relief inclusive of interest subsidy on loans to the entrepreneurs connected with tourist trade who have suffered losses and are not in position to pay dues to the financial institutions with effect from 1.1.1990
- (b) Payment of interest subsidy on the institutional financing in the private sector.
- (c) Soft loans to the private sector for reconstruction/renovation.
- (d) Provision for reconstruction, replacement of gutted, damaged properties of tourism department, JKTDC, etc.

Organising festivals for promotion and revival of tourism is underway, e.g., the Ladakh festival, Baisakhi Festival to ensure a large number of Indian and foreign tourists in such events.

#### FUTURE POTENTIAL OF TOURISM IN THE STATE

The three distinct regions of the state offer tremendous potential that has not yet been fully tapped.

Jammu, nestled against the backdrop of the snowcapped Pir Panjal Mountains is a transition between the Himalayan range in the north and the dusty plains of Punjab in south. Between these two extremities lies a series of picturesque scrub-covered hills, forested mountain range and river valleys. The Shivalik hills cut across the area from the East to the West while the rivers Ravi, Tawi, and Chenab flow through the region.

The tourism department is seeking to exploit the potential of Jammu as a tourist destination on its own and not just a transit point en route to Kashmir or on a

pilgrimage to the Vaishno Devi temple. With this intention, it organised a three-day festival (13-15 April, 2001) 'Jashn-e-Jammu', in collaboration with various trade, religious and social organisations. The festival concluded with cultural activities at Baghe-Bahu fort, where a photo exhibition had also been organised to focus on the rich cultural heritage of Jammu. The event received a good response from a large number of people, including tourists and pilgrims. The festival, the first of its kind in the state, depicted the glorious history of Jammu, and its tourist potential.<sup>5</sup>

Then comes Kashmir, the paradise on earth. Kashmir is a multifaceted diamond, changing its hues with the seasons always extravagantly beautiful. Two major Himalayan ranges, the Great Himalayan range and the Pir Panjal, surround the landscape from the north and south respectively. Kashmir is rich in green gold, charming vales, dales, meadows, fascinating waterfalls, streams, and springs which appeal to people the world over. Snowy landscapes, vast lakes, scenic islands, historical monuments, orchards and health resorts have a vast scope to carry out all kinds of adventurous activities offer an unparalleled potential to attract tourism as no part of the globe can.

Kashmir's winter tourism potential can be fully harnessed if the technological expertise in avalanche triggering available with the Snow and Avalanche Study Establishment (SASE), (a Defence Research and Development Organisation (DRDO), laboratory located at Manali) is made use of by the Jammu and Kashmir government. The scientific approach adopted by the SASE to control and render avalanche-prone areas safe, could result in the Gulmarg-Khilanmarg slopes being developed into the world's best and most popular ski slopes for heli-skiing.<sup>6</sup>

Last comes Ladakh, the land beyond the Himalayas abounding in awesome physical features. Bound by the two mightiest mountain ranges, Karakoram in the north and Great Himalayas in the south, it is traversed by two other parallel chains, the Ladakh range and the Zanskar range. The highest mountain peaks, most difficult rock faces, huge glaciers, challenging mountain rivers have all remained largely unexploited. In fact, this is the largest untapped resource for development of adventure tourism anywhere in the world. Apart from the sweet-water lakes of Dal, Nagin and Wular in the valley, there are a large number of high altitude mountain lakes such as Gangabal, Krishansar Vishansar, Tarsar, Marsar and Kounsar Nag. The lakes in Ladakh though saline are huge, e.g., the Pangong Lake which is 150 km long.

<sup>5</sup> Sharma, Naveen, Private Entrepreneurs offered sops to aid tourism in Jammu, Express Travel & Tourism, Issue Dated 16-31 May 2001. From internet.

<sup>6</sup> SASE expertise can boost J&K tourism, *The Tribune*, Monday, 22 February, 1999.

Apart from the main Kashmir valley, the valleys of Wardwan, Gurez and Tilel remain to be exploited for tourist activity. There are meadows many times bigger than the famous Gulmarg which are yet to be reached, e.g., Bungus valley in Lolab. Among the rivers, Zanskar, Suru and Chenab have extensive potential for rafting, kayaking and other white water sports. The snow conditions and weather in the Pir Panjal range which presently have only one ski resort of Gulmarg have the potential of locating more than a dozen ski resorts.

The other important aspect of tourism potential is the existence of shrines, monasteries, temples and cave temples in the three regions. The shrines of Kashmir are a tribute to the Sufi and mystic school of Islam for which the valley is famous throughout the world. The monasteries in Ladakh are living temples of Buddhism in their original environment and have remained unchanged for centuries. The temples and the cave shrines in Jammu such as the Mata Vaishno Devi attract more than 5 million pilgrims every year.

Though tourism comes after agriculture, horticulture and handicrafts, its tremendous potential and the natural resources of the state can make it the main industry of the state.

# INVESTMENT OPPORTUNITIES IN THE TOURISM SECTOR

Keeping in view the potential and expected growth of tourism, Jammu and Kashmir would require and welcome investments in the following areas:<sup>7</sup>

1. Upgradation/improvement of airport facilities and setting up of feeder air services: Investment in an International Airport in Srinagar would be advisable as most of the people flying from Europe to the Far East and Australia would gladly take a stopover in Kashmir and such an increase in tourist flow would give sufficient returns for any investment in this area. In addition, there are a number of virgin tourist areas which could be exploited fully, only if accessibility is improved by starting feeder air services with small aircraft or even helicopters. These areas include Wardwan Valley in Kishtwar, Zanskar Valley, Gurez, Telel, Bungas and some areas in Ladakh such as Nubra valley, Pangong/Tsomoriri Lakes, etc. These air services would not only throw open these areas to domestic and international tourists, also provide a link to the local population which remains cut-off during winters.

<sup>7</sup> Kashmir Vision 2020, Investment Opportunities for Tourism, J& K Tourism.

# 2. Local Transport

The services of local transport at present do not come up to the international standard. Hence there is ample scope for investment in luxury sightseeing coaches, air-conditioned cars and mini buses of international level.

# 3. Hotel Accommodation

All major tourist destinations in the world have international standard hotel chains whose facilities, norms and standards are uniform throughout the world. Setting up of international chains such as Hilton, Holiday Inn, Meridien, Radisson, Hyatt and so on will add prestige to the destination. There are possibilities of the taking over of some existing properties for upgradation or even for setting up independent units in different tourist areas of the state by outside investors.

#### 4. Recreational Facilities

The state lacks such facilities as amusement parks, health clubs, indoor skating rinks, bowling alleys, casinos and so on. Therefore investment for setting up of international standard facilities for recreation in different parts of the state is welcome.

# 5. Golf Tourism

Golf-Tourism has gained importance in recent times. In Srinagar there is the well-known Royal Springs Golf Course, one of the best in Asia. Investments can be made for setting up similar golf courses in other parts of the valley such as in Gulmarg, Pahalgam, Sonmarg and so on. This would develop a golf circuit in the valley for specialized tours.

# 6. Ropeways

The experience of setting up of the Gondola in Gulmarg has shown that it is a very viable preposition as a tourist attraction. There are immense possibilities of setting up of such Gondolas/Cable Cars and other Ropeway systems in different tourist areas. Investment in this sector would be very welcome and the investors would also be eager, this being a good commercial preposition. Investments are sought for Gondolas/Cable Cars at Pahalgam, Sonmarg, Patnitop and Bagh-e-Bahu-Mahamaya in Jammu. Some of these ropeways would not only be a tourist attraction but would open up areas for tourists who are interested in Winter Sports, as has been the case in Gulmarg. In fact, the installation of rope ways opens up new tourist areas in a more sustainable way as construction of roads into these areas usually causes damage to the ecology due to accelerated exploitation of the area.

# 7. Turnkey Development of Resorts

There are totally virgin areas in Kashmir where no tourism activity has taken place at present or the activities are at a low level. It would be worthwhile to invite investment for total development of these resorts on a turnkey basis. In this regard the resorts of Bungas, Aharbal circuit, Yousmarg, Sanasar, Mantalai, Wardwan, Gurez and Telel valleys could be given out on a turnkey basis for development to international/national resort development agencies. Investments are invited for turnkey development of resorts with the stipulation that employment would be in the ratio of 80 per cent local and 20 per cent from outside. The aim is not only to develop totally new resorts but also to generate sufficient employment in these remote areas for the local population.

# **INCENTIVES**

The following package of incentives has been sanctioned to boost the industry.

- (i) The state government will grant 30 per cent capital outright investment subsidy on the fixed assets including cost of land for new tourism units. This subsidy will also be available for expansion of the existing units but will be restricted to investments made for the extension of existing units only.
- (ii) If a new unit invests Rs. 25.00 crore or more in fixed assets including the cost of land in any area of the state, it will be treated as a prestigious unit; a capital outright investment subsidy of Rs. 60.00 lakh would be given to it at the time of commissioning.
- (iii) The following items shall quality for capital outright investment subsidy:-
  - (a) Cost of land and its development
  - (b) Civil Works including sanitary fitting plumbing and internal electrification
  - (c) Modern kitchen equipment and refrigeration units
  - (d) Sewage disposal system
  - (e) Air conditioning and central heating units
  - (f) Geysers and boilers.
- (iv) Any unit which avails of the incentives under Capital out-right investment subsidy shall be debarred from selling/leasing the property or the unit for a period of 5 years from the date of commissioning. In case of default the Capital outright Investment Subsidy shall be recoverable as arrears of land revenue.
- (v) In the case of an existing hotel-unit which wishes to expand its capacity, the unit shall be bound to increase its capacity by at least 1/3<sup>rd</sup> of its existing bed strength. The expanded capacity should conform at least to the existing standard of the hotel. The subsidy under the expansion scheme shall be

- granted only on the basis of the project report prepared by reputed consultants and approved in writing by the Director of Tourism.
- (vi) In order to estimate the cost of the civil works including electrification, etc. to determine the quantum of capital outright investment subsidy due to a unit, the following would be the prescribed authorities for recording the necessary certificates.

(a)	Civil works up to the value of Rs.	
	20.00 lakh	concerned Public Works (R&B)
		Division
(b)	Civil works above the value of Rs. 20.00 lakh up to 50.00 lakh	The Superintending Engineer, PWD (R&B) of the concerned Division.
(c)	Civil works above the value of Rs. 50.00 lakh	Chief Engineer, PWD (R&B) of the area concerned.

- (vii) In the case of Leh and Kargil Districts, the Superintending Engineer, PWD (R&B) who enjoys the powers of Chief Engineer will be the prescribed authority for recording the certificate.
- (viii) As far as assessment of the value of land is concerned, the District Collector of the concerned district will certify the value of the land.
- (ix) The tourism projects, which propose to avail of the incentives under the present rules, shall route their cases to the Director Tourism through the concerned officer of the Tourism Department of the area.
- (x) All incentives in the form of subsidy that will be sanctioned under the prevailing rules shall be disbursed among the unit holders after the commissioning of the project.

#### CHALLENGES AND OPPORTUNITIES

Tourism, once a mainstay, is now dead. The challenges faced by this sector are many as the continuous militant activities have led to the decline of tourism industry in the state of Jammu and Kashmir. In order to fight the militant activities, the army and police have been taking several measures. For instance, police routinely stop and search passengers of overcrowded buses. Armed security forces line the roads with sand bagged bunkers at strategic points. Heavy military vehicles are on constant patrol. In such a suspicious climate it is natural that the tourist flows have declined. The economy therefore has collapsed. The houseboat-hotels for tourists on Dal Lake are floating high on water, empty of guests. Shopkeepers, carpet-sellers, farmers, hoteliers and traders report that business is off by as much as two-thirds from a year ago (i.e. 2001).

Though the tourism sector has immense backward and forward linkages in terms of both income and employment and can contribute significantly to the economy, haphazard and uncontrolled growth can destroy the very base on which tourism is built and poor planning cause considerable damage. Already ten years of armed militancy in Kashmir is destroying its forests, lakes and wildlife. Endangered wildlife is freely poached and human habitation is destroying the area's ecosystem, leaving its fate hanging in the balance environmentally as well as politically.

Tourism should therefore be based on perspective plans prepared with appropriate technical and professional assistance. The plans or projects must include:

- environmental impact studies,
- carrying-capacity studies,
- instruments of spatial and land use planning,
- instruments of architectural controls,
- strategy for preparing the local community to safeguard its cultural identity, and
- awareness programmes for local participation and local commitment to the project.

# RECOMMENDATIONS

Connectivity or easy access is an essential requirement for development of tourism in any region. Many a picturesque and exquisite sport in the state suffers from lack of connectivity. First let us take up air connectivity as in the twenty-first century. For time-starved tourists, air transport is going to be the most preferred mode of transport. There is a long-standing demand for making Srinagar an international airport. This demand needs to be considered seriously and Srinagar airport should not only be declared as an international airport, but made a charter destination.

If Lhasa in Tibet can be developed into a charter destination there is no reason why Leh (capital of Ladakh region) cannot be made one too. If some expansion or modification in the runway is required, it should be undertaken. Kargil airport was developed a few years ago but it has still not been commissioned. The earlier Kargil airport becomes operational, the better it is for promotion of tourism to the Suru valley, Drass area and Zanskar. Further, Poonch, Kishtwar (Doda district) and Rejouri need to be brought on the air map of the state. This is the only way to improve their connectivity. While Nubra valley and Changthang area in Ladakh

have been thrown open to tourists, there is very little infrastructure available in these areas. It would be an outrage to put up concrete and cement structures in these areas of pristine purity and unparalleled beauty. Wooden structures, designed in traditional Ladakh architecture could be the answer. Further the local residents need to be encouraged to create a paying-guest or house-guest accommodation as many a tourist would love to stay in local houses and experience the Ladakhi way of life for themselves.

The work on the construction of the railway line connecting Jammu with the Valley has been proceeding at a snail's pace and at this rate it will be decades before the railway line goes up to the valley. It is essential that this important link is accomplished within a definite time frame as the commissioning of this line will throw up a whole host of economic opportunities and make access to the valley easy and smooth. This project therefore deserves to be given top priority.

There is need to upgrade and refurbish the Patnitop complex. With Gulmarg being virtually out of bounds because of militancy, a lot of tourists from neighbouring states visit Patnitop. The maintenance of the complex and the standards of service, however, leave a lot to be desired. A small percentage of pilgrims visiting Vaishno Devi Shine also visit Patnitop. A sustained publicity and promotion campaign can attract a larger number of visitors to Patnitop. If need be, the management of the complex could be handed over to some private, professional hotel chain or group.

The people of Jammu and Kashmir are handsome, smart and hardworking. The tourism industry can be a major source of employment for them. What is needed is the imparting of specialized skills and state-of-the-art technical education. There is a Hotel Management Institute in the state being run under government auspices. The state can easily do with two such institutes with international affiliations (preferably with some hotel management institute of France or Switzerland). These institutes should be set up in the private sector but the government should act as a facilitator.

The state of Jammu & Kashmir is a natural and inevitable destination for tourists. Its unique beauty, the fabled gardens, the shimmering lakes the snow peaks, the flowing rivulets, the majestic Chinars, the tall Deodars, the rolling valleys, the fascinating trekking trails and innumerable adventure possibilities – all these beckon the tourists. What has been missing for sometime is peace and security. And these two factors are the pre-requisites for development and growth of tourism in the state.

# 4. INFORMATION TECHNOLOGY

#### INTRODUCTION

Information Technology (IT) has emerged as an important sector in transforming the socio-economic lives of the people. IT can be used as a major instrument to provide new opportunities for income generation and employment to those sections that have been marginalized for long due to lack of opportunities. India, during the past decade, has experienced a high growth in Information Technology industry. Exports of Software as well as IT enabled services increased from Rs. 17150 crore in 1999-00 to Rs. 36,500 crore in 2001-02 and is expected to increase to Rs. 47,500 crore in 2002-03.\*

Though IT industry is not well developed in the state, it has great potential for contributing to the expanding market. The state has a large strength of qualified and skilled personnel so essential to the development of the IT industry. The state offers a highly conducive environment for setting up the industry. On the other hand IT can also contribute in eliminating various problems ailing the state economy, like educated unemployment, weak industrial base, poor accessibility, small market, etc. Given the importance of IT in the development of the state, the government has taken certain initiatives to develop this industry.

# **GOVERNMENT INITIATIVE**

The state government in 1996 categorized IT as one of the thrust areas in the industrial policy of the state. To give boost to this industry, an Electronic Industrial Estate has been set up at Rajbagh in Srinagar. The government has also set up a Software Technology Park (STP) at Rangreth, the first phase of which was commissioned in March 2001. The government has announced various incentives under its industrial policy to encourage investors to set up units in the Technology Park. The STP offers facilities like:

- □ High-speed data communication
- ☐ Microwave linkages to units located outside the complex to integrate them with International gateway through Local Area Network (LAN)
- □ Flexible Band width as per customer needs

<sup>\*</sup> Kashmir Vision 2020, Conference on Investment Opportunities in J&K, Srinagar, June 2002.

- Central computing/conferencing facilities to member units
- □ Uninterrupted power supply, etc.

To increase efficiency, responsiveness and transparency in the day-to-day functioning of the government, stress has been laid on introducing increased use of information technology. The finance department has been the special focus area for e-governance besides Health & Medical Education, Power Development Works, Rural Development and Food & Supplies departments.

The government has also set up an Information Technology Unit under the direct control of Chief Minister's Office for building formalized systems for information flow. A high-level committee, headed by the Chief Secretary has also been set up for regular monitoring of the progress on the implementation of IT in government departments. The government has taken steps to set up Community Information Centres at the block level to provide information to the people regarding government activities. The government has also taken initiative to provide information on the status of development schemes at the district level.

# CHALLENGES AND OPPORTUNITIES

# Challenges

- 1. Development of IT requires un interrupted power supply. Ensuring regular power supply is one of the challenges facing the state.
- 2. Poor road connectivity inhibits the rural population from taking benefits of using IT.
- 3. Low awareness among the masses about the application of IT.

# **Opportunities**

- 1. The geo climatic conditions of the state offer an ideal location for setting up IT industry.
- 2. IT being a knowledge-based industry, a large pool of educated and skilled youth in the state can provide the required manpower for developing the IT industry.
- 3. Government initiatives and the new industrial policy, which provides the favourable environment for increased investment in IT industry.

# RECOMMENDATIONS

- 1. Though the state has plenty of talent, it needs to be groomed. For this the state government should establish a university on the lines of Indian Institute of Information Technology (IIIT) as established in other parts of the country.
- 2. To encourage local youth to set up their own units, J&K Bank, SIDCO etc. should provide soft loans.
- 3. Poor infrastructure has so far kept investors away from investing in the state. The government should take steps to improve the infrastructure and ensure uninterrupted power to the IT units.
- 4. To promote J&K as the premier location for world-class companies, the state government will need to act on two fronts. First, it must provide companies and professionals with infrastructure and living conditions comparable to any other location in the world. IT professionals are highly valued globally and have their pick of jobs & facilities. They will choose to move to J&K only if working and living conditions are comparable to other countries of the world. Second, the state should develop and implement a compelling promotional programme to attract IT companies in the state.
- 5. Since IT industry is a knowledge-based industry, government should try to attract those professionals who have left the state/ country for training and are willing to come back.
- 6. Non-Resident Indians (NRIs) can be another group of potential investors, whom government should try to attract. To do this the government can open a website giving information about the investment opportunities in the state, tax concessions & various incentives offered, potential markets, etc.
- 7. Online banking, e-commerce, e-governance, etc., are new areas where IT can be used to the benefit of the economy.
- 8. National as well as international marketing of tourism.
- 9. Promote handloom and handicrafts through increased use of IT in designing, advertising and marketing.
- 10 Since IT does not require a big set-up and is a small office/ home office type industry, there is vast scope of employment of women in this industry.

# 5. BIOTECHNOLOGY

# **INTRODUCTION**

The ecological environment of Jammu and Kashmir is fragile and therefore not conducive for large-scale industrial development in the conventional sense. The agriculture sector, on the other hand, continues to be important sector in the state economy as large sections of the population depend on it for employment as well as consumption. However, agriculture is still a subsistence sector, with the state purchasing large quantities from outside sources to meet its requirement for food grains. Decline in the availability of arable land to the agricultural population per capita, decreasing from 0.30 hectare in 1961 to less than 0.13 hectare now due to increased urbanization and population limits constraints on the production. Use of large-scale capital-intensive technologies also loses much relevance due to little area expansion possibilities. At the same time, highly intensive agricultural practices are feared to produce adverse environmental consequences. Biotechnology offers a wide range of technologies and products that can enhance both productivity as well as the quality of agricultural produce in a more eco-friendly manner. With better understanding of the biological processes and ability to manipulate genes of living organisms, it has been possible to modify products or improve them for the benefit of the humankind.

In this scenario, to raise the yield of food crops to keep up with the ever-increasing population, to shift agriculture from high-input low-productivity to sustainable agriculture, to reduce environmental pollution due to intensive farming, biotechnology has far-reaching benefits.

#### RATIONALE

Although the state is rich in natural resources such as fruits, medicinal and aromatic plants, forest produce, ornamental plants, livestock, etc., the richness and diversity of the region has not been tapped fully. The development, maintenance, productivity and exploitation of this diversity is an urgent need of the region. On the other hand, unabated and unscientific methods of extraction of this diversity have disturbed the eco system of the region. The application of biotechnological innovations like tissue culture for crop improvement; use of bio fertilizers as an answer to small farmers in cutting down their cost of fertilizer use and shift in international demand from fruits and cereals grown by using chemical fertilizers to those grown by using bio

fertilizers; as a remedial measure to restore the eco system and make this bio diversity productive and exploitable for economic gains of the region could prove a boon for the state.

# CHALLENGES AND OPPORTUNITIES

# Challenges

The state of Jammu and Kashmir is divided into three geo-climatic zones, viz., subtropical, temperate and cold arid zone. Each zone has its specific needs. Most of the research in biotechnology has taken place in the temperate zones of the country. Technical innovations can't simply be borrowed from other states. There is a need to develop indigenous technology for productivity enhancement and developing new varieties of crops, keeping in mind the local conditions and demands.

The only source of funding available for research in biotechnology is government funding. There is a need for more private companies to come forward and invest in R & D in the state.

Another important challenge for the development of biotechnology is the linkages between the research institutes and the cultivator. This gap becomes a hurdle in the commercialization of biotechnological research.

## **Opportunities**

The climate of the state is ideally suited for research and development in the field of biotechnology. Some infrastructure is already available for carrying out R&D, e.g., the Agriculture University of Jammu and Kashmir, Regional Research Laboratory, Jammu and the Field Research Laboratory, Leh.

Biotechnology is a knowledge-based approach, which offers unique solutions to the problems. Trained manpower is required for the development of the biotechnology industry. The state has sufficiently large manpower in this area. The Agriculture University of Jammu and Kashmir has a separate division for biotechnology. In addition to M.Phil and Ph.D scholars, a fairly good number of post-graduates pass out each year.

The state has a huge reserve of resources like minor forest produce, ornamental plants, and medicinal and aromatic plants. More than 50 per cent plant species used in British pharmacopocia are reported to grow in Jammu and Kashmir.

# RECOMMENDATIONS

Given the increasing tendency of farm labour moving to non-farm activities, the development of biotechnology to improve farm productivity and boost employment in the state gains more relevance.

The following are potential areas where bio-technological approaches can play a significant role:

- Since bio-technology has a vital role in plant propagation, improvement and protection, any initiative in this area will reduce the dependence on time consuming conventaional breeding and plant protection methods. Adoption of new techniques may not be possible at present due to lack of sophisticated infrastructure required. State government should take certain initiatives to build the infrastructure for biotechnology research.
- The climate of the state is ideally suited for horticulture and vegetable cultivation. But the output is far less than neighbouring states. The government should encourage private research initiatives in hybridization, micro-propagation, tissue culture and other biotechnological applications in horticulture to introduce plants which have a short gestation period.
- The demand of medicinal plants has seen a significant growth all over the world because of popularity of alternative systems of medicine. Both the Regional Research Laboratory, Jammu and Field Research Laboratory, Leh have done some commendable work on medicinal plants. In view of the exponential growth in demand for medicinal plants, private capital and enterprise need to be attracted in this sector. The state government needs to formulate a special package to attract investment in the sector. The financial incentive in such a package should be related to the employment potential of the units.
- Jammu and Kashmir provides a favourable climate for cattle breeding. In other parts of the country one has to create an artificial climate for cattle breeding and the success rate is low. The state government should emphasize the use of biotechnology to introduce new and improved breeds.
- Another important area for the use of biotechnology is seed production. Ladakh region of the state provides excellent soil and climate for the seed production. The state government should encourage experiments in this area.
- To encourage investments, the government can develop a Biotechnology Park where it can provide basic infrastructure along with various incentives to the private investors.

Unavailability of fodder, in winters, is one of the major problems in Ladakh and Kashmir regions. Through biotechnological methods, low-cost, high-nutrition fodder can be developed. Agriculture University, Kashmir has done some research in this area, which needs to be commercialized. Further, the possibility of availing fruits of research carried out by various Europe-based institutes on high-yielding, nutritious fodder should be explored.

There is a need for concerted effort to promote the use of biotechnology in the state. The state government's role should be to underwrite investments by the private sector and provide infrastructure. The research institute/ academia should develop technology, transfer it to the users, train and advice them. The private /commercial sector should implement the technology developed on a large scale thereby creating jobs.