

AN ENVIRONMENTAL IMPACT ASSESSMENT STUDY

*of*

URBAN SPRAWL

*on*

*Srinagar City*



By  
Mutaharra AW Deva



DIRECTORATE OF ECOLOGY, ENVIRONMENT & REMOTE SENSING

Government of Jammu & Kashmir

## Forest Complex, Gladni Jammu

## FOREWORD:

Land use and Urban Sprawl are major environmental concerns affecting us in a variety of ways. We must adopt sustainable patterns of development which are not self destructive. Sprawl is the increased use of urbanized land by fewer people than in past. The population of Srinagar grew from 3.9 lac to 11.8 lac during the last 50 years. This increase has had its impact on farm land, wildlife habitat, grasslands, increased tax burden, increase air pollution with water use & increased energy consumption, social fragmentation, loss of time mostly in commuting, loss of exercise, degraded noisy surroundings, tourism industry damage etc. Rapid urbanization causes disorganized and unplanned growth of town and cities. The pressure of an ever growing population has become a burden on our limited civic facilities of SMC (Srinagar municipal corporation) which are virtually collapsing. A symmetrical growth of urban centers consumes agricultural adjacent land, resulting in lower agricultural productivity as has happened in sri nagar. Sprawl impacts upon ecosystem and also environmental resources which are considerably decreasing. Sprawl and associated activities degrade environmental resources such as surface water and ground water, air quality and landscapes, aesthetics and destroys wildlife habitats, as can be amply seen in Srinagar environment. The Hangul is a victim of urban sprawl.

Urban sprawl restricts and eliminates access to natural resources, raw materials such as timber, fuel minerals and non-fuel minerals including sand, gravel and limestone. The construction material from which cities are constructed, results in the loss of prize agricultural land with all nearby metropolitan areas.

Urban sprawl is referred to as irresponsible and often poorly planned developments that destroys green space, increasing traffic, contributes to air pollution, leads to congestion with crowding and does not contribute significantly to revenues- a major concern, which the city of Srinagar is facing.

Srinagar city has grown in an absolutely haphazard manner. We lack parking places, children's parks, resting parks, paths for morning walkers and all other facilities of a vibrant, well planned city. Srinagar is ecologically, economically, environmentally and from tourism point of view a messy city where there is nothing planned. We do not have a environmentally viable plan. We lack solid waste disposal facility; effluent discharge is taking place without any treatment. The Dal lake is in a shambles as also the other lakes, water bodies and water ways.

It is high time, we rise to the occasion, keeping in view the world focus on reducing carbon emissions and on the climate change phenomenon. We re-orient our plans and stop urban sprawl of this tourist city, which has many historical events attached to it.

With the large scale migration due to various significant and insignificant reasons, the Srinagar city is facing serious environmental pressure on its already limited natural resources.

Urban sprawl needs a limit now and planning needs re-orientation for sustenance of this important capital city of the state of Jammu and Kashmir.



## URBAN SPRAWL OF SRI NAGAR CITY-AN EIA STUDY

Urban sprawl also known as suburban sprawl is the spreading of a city and its suburbs over rural land at the fringe of an urban area. Residents of sprawling neighborhoods tend to live in single family homes and commute by automobile way. Low population density is an indicator of sprawl. Urban planners emphasize the qualitative aspects of sprawl such as the lack of transportation options and pedestrian friendly neighborhoods. Conservationists tend to focus on the actual amount of land that has been urbanized by sprawl.

The term urban sprawl generally has negative connotations due to the health and environmental issues that sprawl create. Residents of sprawling neighborhoods tend to emit more pollution per person and suffer more traffic fatalities. Sprawl is controversial, with supporters claiming that consumers prefer lower density, neighborhoods and that sprawl do not necessarily increase traffic. Sprawl is also linked with increased obesity since walking and bicycling are not viable commuting options. Sprawl negatively impacts land and water quantity and quality and may be linked to a decline in social capital.

Sprawl is characterized by several land use patterns which usually occur in unison and are described below:

### **Single use zoning:**

This refers to a situation where commercial, residential and industrial areas are separated from one another. Consequently, large tracts of land are devoted to single use and are segregated from one another by open space, infrastructure, or other barriers. As a result, the place where people live, work, shop and recreate are far from one another, usually to the extent that walking is not practical,



so all these activities generally require an automobile (though a bicycle may also be feasible). This is happening in Srinagar city with new urban areas of Hyderproa, Humahama, Ahmed Nagar, Harwan, Nishat from where residents have to commute long distances for shopping to Srinagar mainland.

### **Low-density land use:**

Sprawl consumes much more land than traditional urban developments because new developments are of low density. The exact definition of low density is arguable, but a common example is that of single family homes, as opposed to apartments. Buildings usually have fewer stories and are spaced farther apart, separated by lawns, landscaping, roads or parking lots. Plot sizes are larger and because more automobiles are used much more land is designated for parking. The impact of low density development in many communities is developed or urbanized land which is increasing at a faster rate than the population, which is true of Kashmir, in general and Srinagar city in particular. Architectural innovations in the name of sprawl of this city where people live in single family homes and consume large chunks of land is what is called farmhouses in modern parlance.

Another kind of low density development is sometimes called leap-frog development. The term refers to the relationship, or lack thereof, between one subdivision and the next. Such developments are typically separated by large green belts i.e. tracts of undeveloped land, resulting in an average density for lower even than the low density described above. This is a 20<sup>th</sup> and 21<sup>st</sup> century phenomenon generated by the current custom of requiring a developer to provide subdivision infrastructure as a condition of development.

Usually the developer is required to set aside a certain percentage of the developed land for public use, including roads,





parcs and schools. In the past, when a local government built all the streets in a given location, the town could expand without interruption and with a coherent circulation system, because it had condemnation power. Private developers generally do not have such power and often choose to develop on the tracts that happen to be for sale at the time they want to build rather pay extra or wait for a more appropriate location. This situation is so prevalent in the Srinagar city because new residential areas are being developed without any planned development and pre construction surveys about the suitability of this colony 25 years hereafter. This concept is generally referred to as Environmental Impact Assessment studies which should have been part of each and every plan in the Srinagar city plans.

#### **Car-dependent Communities:**

Srinagar city has become highly car dependent community as areas of urban sprawl are also characterized as highly dependent on automobiles for transportation, a condition known as automobile dependency. Most activities, such as shopping and commuting to work, require the use of a car as a result, both the area's isolation from the city and the residential zones have from its industrial and commercial zones. Walking and other methods of transit are not practical; therefore, many of these areas have few or no sidewalks. In many suburban communities, even stores and activities that are close by, are contrived to be much farther, by separating uses with fences, walls and drainage ditches. Cars are in abundance in Srinagar city, which has resulted in umpteen environmental hazards both for human and environment. Even for daily bread purchases people move from long areas to Residency Road to get bread from JEE ENN Sons.

## DEVELOPMENT CHARACTERISTICS OF SPRAWL

### **Housing Sub-divisions:**

Srinagar city has undergone three major planning efforts, out of which the Master Plan 1971-1991 and 2001-02 are the two statutory documents out of which 1971-1991 has been prepared by Town Planning Organization and 2001-02 by the Srinagar Development Authority. The major colonies in the city include Botakadal, Soura(East), Natipora, Balgarden, Shertrashahi, Rawalpora, Jewahangir, Bemina, Barthana, Soura (West), Nuundreshi Colony, Bemina, Tibetan Housing Colony, Kathidarwaza, Bagi-ali-Mardan Khan, Bag-i-Mehtab, Zakura and Habak. The planned colonies are not only economically more efficient but also are the only means of countering the process of urban sprawl which results in inefficient form of development and consequently in the wastage of natural and monetary resources of the state and creation of Housing sub-divisions. These areas are facing the brunt of urban sprawl.

### **Strip Malls:**

Shopping centres are locations consisting of retail space and these vary from strip malls which refer to collection of buildings sharing a common parking lot, usually built on high capacity roadways with commercial functions i.e. a strip or a retail park. Strip malls/retail parks contain a wide variety of retail and non-retail functions that also cater to daily use e.g. video rental, takeout food, laundry services, hairdresser etc. Strip malls consisting mostly of big box stores which are sometimes called power centers. These developments tend to be low-density. The buildings are single story and there is ample space for parking and access for delivery vehicles. This character is reflected in the spacious landscaping of



the parking lots and walkways and clear signage of the retail establishment. Some strip malls are undergoing a transformation into Lifestyle Centres, entailing investments in common areas and facilities (plazas, Cafes) and shifting and shifting tenancy from daily goods to recreational shopping. For Srinagar city we are experiencing a mixed sprawl with no planned development. This sprawl is to be restricted and the US or UK model needs to be studied by the urban planners. If these strip malls or retail parks are to be encouraged, the government has to implement size restrictions for these superstores in an effort to limit sprawl.

### **Shopping Mall:**

Another prominent form of retail development in areas of Srinagar are characterized by sprawl, are the shopping mall. Unlike the strips mall, this is usually composed of a single building surrounded by a parking lot which contains multiple shops, usually anchored by one or more departmental stores. The function and size is also distinct from the strip mall. The focus is almost exclusively on recreational shopping rather than daily goods. This type of shopping malls is found in Srinagar city say at Residency Road area etc. Shopping malls are often detrimental to downtown shopping centres of nearby areas of the city since the shopping malls act as a surrogate for the city. centre. Some areas have responded to this challenge by building shopping centres of their own as is seen in Rajbagh, Jawahar Nagar, Barzulla and Hyderpora.

### **Fast Food Chains:**

Fast food chains are common in suburban areas. They are often built early in areas with low property values where the population is about to boom and where large traffic is predicted, and set a precedent for future development. Fast food chains accelerate



suburban sprawl and help set its tone with their expansive parking lots, flashy signs and plastic architecture, thereby reinforces a destructive pattern of growth in an endless quest to move away from the sprawl that only results in creating more of it, but the fast food centres are coming up fast in almost all city areas. This is particularly true of new urban areas like Nowgam, Hyderpora etc. This is throwing new challenges to the urban planners and environmentalists alike.

The term Losangelization is also sometimes used for urban sprawl, though this may be misleading. Los Angeles was one of the world's first low density urbanized area, as a result of wide automobiles ownership. However, Los Angeles has become denser over the past half-century, principally due to small lot zoning and a high demand for housing due to population growth. Similarly, Sri nagar increased its density from 531 to 540 Sq Kms. Srinagar city has grown very fast though unplanned. Residential planning is at low ebb.

Arguments opposing urban sprawl run the gamut from the more concrete effects such as health and environmental issues to more abstract consequences involving neighborhood vitality.

## **HEALTH AND ENVIRONMENTAL IMPACT:**

### **Urban and Environmental Impact:**

Urban sprawl is associated with a number of negative environmental and public health outcomes, with the primary result being increased dependence on automobiles.

However, this is mitigated significantly with nearby development of shopping and recreation areas. Also, many people prefer to live close to their place of business which is increasingly





centered less on urban areas. Increased pollution and reliance on fossil fuel has caused loss of natural resources and increased emission level of obnoxious gases into the atmosphere.

Since the time, when vehicle ownership was becoming widespread, public health officials recommended the health benefits of suburbs due to soot and industrial fumes in the city centre. However, air in modern suburbs is not necessarily cleaner than air, in urban neighborhoods. In fact, the most polluted air is on crowded highway, where people in suburbs tend to spend more time. On average, suburban residents generate more pollution and carbon emission than their urban counterparts because of their increased driving.

#### **Increase in traffic and traffic related fatalities:**

A heavy reliance on automobiles increases traffic throughout the city as well as automobile crashes, pedestrian injuries and air pollution. Motor vehicle crashes are the leading cause of death between the ages of five and twenty four and is the leading accident-related cause for all age groups. Residents of more sprawling areas are at greater risk of dying in a car crash. The vehicular traffic have increased manifold in Srinagar city and there is no traffic planning in place. The irony of the fact and lack of scientific and environmental knowledge to our administration have lead to a very dismal traffic scenario. In Delhi where Euro-II and III emission standards are in force and cars without EURO emission standards are not registered in NCR. The old vehicles, rejected by Delhi traffic registration authorities are being purchased by the State and run on our roads creating emission of obnoxious gases. This is responsible for many health related problems in the state, particularly respiratory diseases and bouts of asthma attacks to the kids.



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A view of Srinagar Urban Sprawl

Such shopping sites are a common site -  
Hyderpora Chowk



World researches and health organization have both stated that there is a significant connection between sprawl, obesity and hypertension. Presumably living in a car centered culture forces inhabitants to drive everywhere, thus walking far less than their urban (and generally healthier) counterparts.

### **Decrease in Social Capital:**

Urban sprawl may be partly responsible for the decline in social capital. Compact neighborhoods can foster causal social interactions among neighbours while low density sprawl creates barriers to interaction. Sprawl tends to replace public spaces such as parks with private spaces such as fences in backyard. Residents of sprawling neighbourhoods rarely walk for transportation which reduces opportunities for face-to-face contact with neighbours. It is seen in new urban centres of Srinagar city that the neighbourhood is not at all aware about each other and this sort of isolation has brought the crime rate to a new high. Recently in Srinagar city's Hyderpora area a girl was stabbed to death in an lane just adjacent to her native house and nobody could ever care about the cries of this poor girl. This has resulted in callous attitude of the society.

### **Decrease in Land Water Quantity and Quality:**

Due to the larger area consumed by sprawling suburbs compared to urban neighbourhoods, more farmland and wildlife habitats are displaced per resident. As forest cover is cleared and covered with concrete in the suburbs, rainfall is less effectively absorbed into the ground water aquifers. This threatens both the quality and quantity of water supplies. Sprawl increases water pollution as rain water picks up gasoline and oil runoff from parking lots and roads. Sprawl fragments the land which increases the risk of invasive species spreading into the remaining forest.



### **Increased Infrastructure Cost:**

Living in a larger, more spread out space makes public services more expensive. Since car usage often becomes endemic and public transport often becomes significantly more expensive, city planners are forced to build large highway and parking infrastructure, which in turn decreases taxable land and revenue and decrease the desirability of the area to such structures. Providing services such as water, sewers and electricity is also more expensive per household in less dense areas.

### **Increase Personal Transportation Cost:**

Residents of low density areas spend a higher proportion of their income on transportation than residents of high density areas.

### **Neighborhood Quality:**

Quality of life has been argued to be eroded by lifestyles sprawl promotes. In traditional neighbourhoods the nearness of the workplace to retail and restaurant space that provides cafes and convenience stores with daytime customers is an essential component to the successful balance of urban life. Furthermore they state that the closeness of the workplace to homes also gives people the option of walking or riding a bicycle to work or school and that without this kind of interaction between the different components of life the urban pattern quickly falls apart. Social scientists has argued that the poor aesthetic of suburban environments make them places not worth caring about and that they lack a sense of history and identity.





Some blame suburbs for what they see as homogeneity of society and culture, leading to sprawling suburban developments of people with similar race, background and socio-economic status. They claim that segregated and stratified development was institutionalized with the financial industries, then legal process of redlining neighbourhoods to prevent certain people from entering and residing in affluent districts. Sprawl may have a negative impact on public schools as finances have been pulled out the city stores and diverted to weather suburbs.

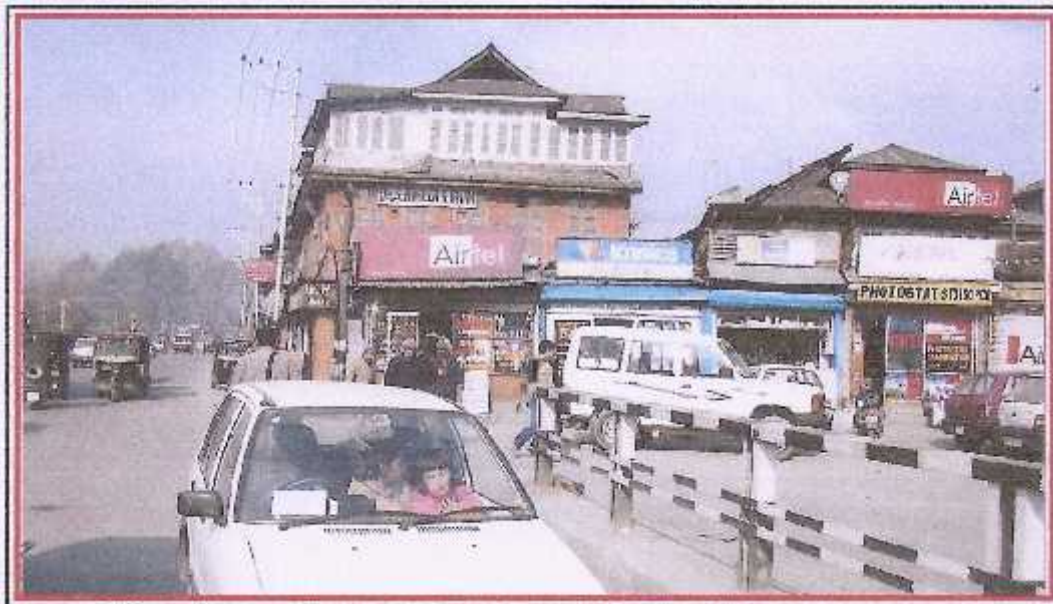
### **Consumer preference for sprawl**

Many households in the west especially middle and upper class families have shown a preference for the suburban lifestyle. Reasons cited include a preference towards lower-density development for lower ambient noise and increased privacy, better schools, less crime, and a generally slower lifestyle than the urban one. Those in favor of a free housing market also argue that this sort of living situation is an issue of personal choice and economic means. However, a number of studies have suggested that many affluent empty nesters are heading back towards the inner city areas to downsize their housing and take advantage of the increased cultural offerings that such areas often have to offer. In many other cities across the Western World, evidence of this trend can be found in geographic patterns of property values, where the highest prices are increasingly commanded in higher density, inner-urban areas, reflecting their desirability as places to live for people with the finances to make a free choice.





A view of Nehru Park - Dal, Srinagar



Dalgate view - Srinagar

## **Debate over Traffic and Commute Times**

Those not opposed to low density development argue that traffic intensities tend to be less, traffic speeds faster and as a result ambient air pollution is lower.

As the research shows that there is a link between population density and the number of rules that must be imposed. The theory goes that as people are moved closer together geographically, their actions are more likely to noticeably impact others around them. This potential impact requires the creation of additional social or legal rules to prevent conflict. A simple example would be as houses become closer together the acceptable maximum volume of music decreases, as it becomes intrusive to other residents.

### **Crowding and increased aggression:**

There have been numerous studies that link increased population density with increased aggression. Some people believe that increased population density encourages crime and anti-social behavior. It is argued that human beings, while a social animal, need significant amounts of social space or they become agitated and aggressive.

### **Facts about Srinagar sprawl:**

Srinagar city is situated on the banks of river Jehlum, a tributary of the famous Indus River, in a heavenly abode on earth with numerous lakes and large expanses of green valleys spread through out. The Jehlum River runs through the city and the valley emptying in the Wular Lake. The city at 876 km north of Delhi is famous for its 9 ancient bridges linking the 2 parts of the city founded by the King Pravarasena II over 2000 years ago, Srinagar owes its name to 2 Sanskrit Words Sri (Profusion & wealth) and Nagar (City)



dating back the 3rd century Be. The city was formerly a part of the Mauryan Empire which once happened to be one of the most important empires of India. This region prospered quite well under the rule of the Kushans in the 1<sup>st</sup> century AD .. During this period, it used to be an important Buddhist Pilgrimage site in the 6<sup>th</sup> Century. However it became a part of the Kingdom of Vikarmadatiya, the ruler of Ujjan. Local Hindu rulers ruled it until the 14th century when Muslim rulers invaded and captured it with the downfall of the Mughal Empire. The fortunes of the area swung dramatically. In 1814, it went to the Sikhs when Ranjit Singh, got the better of the Pathan. However ultimately the British defeated Ranjit Singh and in accordance with the treaty of Lahore in 1846 they appointed Gulab Singh as the autonomous ruler of the Kashmir. Later Hari Singh, the great grand son of Gulab Singh united this huge State into India in 1948.

Srinagar is the capital of State of J&K and is located in the valley of Kashmir at an altitude of 1730 units above sea level. The Dal and Nagin lakes enhance its picturesque settings while the changing play of the season and the salubrious climate ensures that the city is equally attractive to visitors around the year. The city is famous for its lakes of houseboats floating on them. It is also known for traditional Kashmir Handicrafts and dry fruits.

The Chinese traveler Hiven Tsang visited Kashmir in 631 AD found Srinagar at the same place where it stands today. The rule of Hindu Kings in Kashmir ended in 1339 with the last ruler being Laladitya . Muktapida from 1420-1470 the valley came under the rule of king Zain-ul-Aabidin popularly known as Budshah .Some times later mughal Emperor Akbar annexed Sri nagar and included it in his own territory. It was during the rule of Akbar only the city got the striking mosques and garden that it is now proudly boasts. The





last of the muslim rulers of Srinagar was overthrown by the Sikhs under the rule of Maharaja Ranjit Singh in the year 1819. Srinagar has been a prominent destination as the tourist map of India.

Srinagar has several tourist attractions and some of these are the Dal Lake, Nagin Lake, Shankaracharya hill, the Hariparbat Hill that is situated on the top of the Sharika Hill and the Charar Shrine which is situated on the way to Yousmarg. The Dachigam National Park is situated at the same distance from Srinagar. Srinagar offers adventure sports facilities for tourist in Nishat, Shalimar, Harwan, Chesmashahi and Pari-Mahal.

In 1971 as per Digest of Statistics 2001, Srinagar has 200 inhabited villages and 8 uninhabited Villages. In 1981 villages inhabited are 168 and uninhabited 7 with rural population as 138133 lac in Srinagar.

As per census 2001, a total population of 894940 with rural workers as 52335 and Urban main workers 258717, marginal workers 53615 and around 818826 non-workers. Srinagar has 29764 cultivators, 16940 Agricultural labourers and 51489 workers in household industry. The no. of census houses as per the population census of 1981 is 12841 with vacant houses 8158. However, in 1981 number of occupied household as 103219.

The total area according to village papers is 51 hectares with 2 hectors under Forests, 8 hectares of agricultural land put to non-agricultural uses, 4 hectares of land is barren and uncultivable land totaling to 12 hectare, 3 hectares of land as permanent pastures of other grazing lands, 3 hectares of culturable waste land, 2 hectares of fallow land other than current fallow of 3 hectares.

In district Srinagar as per 2001 census 12.02 hectares of land are under Rice, 40 hectares under maize and 0.01 hectares under



wheat 0.61 hectares under pulses, 0.33 lac under condiments and spices, 5.25 under fruits and vegetables and other food crops 0.78 hectares. The irrigated area is canals 16.64 lac, 0.11 tanks, 0.12 hac wells, other sources 0.35, totaling to 17.22 hectares. The forest area as per 2001-02 is 380 sq. kms and wildlife area as 311 sq. kms.

Srinagar had a total of 2791 fishing licenses out of a total of 11787 licenses for the state. The total livestock population for Srinagar is 1.285 lacs of cattle and 0.019 lac Buffaloes out of a total of 31.754 lac cattle and 7.878 lac buffaloes for the State.

Srinagar District had 2001-02 census 4 blocks of Srinagar, Ganderbal, Lar & Kangan with no. of delimited Panchayats as 25,19,22,27 totaling to 93 out of State's total delimited Panchayats of 2700.

The electric scenario in district Srinagar is all inhabited villages of 168 electrified as 100.

The total no. of units SSI registered and employment potential of 7073 in 97-98, with 34229 in employment, 7266 units in 98-99 with 35228 employment, 7547 units in 99-200 with 36323 employment, 7701 units in 20001 with 37119 employment and 7871 units with 38697 employed in 2001-02.

Srinagar has 840 no. of Handicraft Industrial units of handloom cooperatives with 3980 members. Srinagar has 128 bank branches against State's total of 824 outlets branches.

Srinagar has 1070 kms black topped, 335 kms metalled 74 kms shingled 18 kms fair weather 31 kms jeepable as total 1528 kms against state's 14846 kms road length.



Srinagar's health scenario is 25 District SDH ,26 Allopathic and pry units, 26 unani, 3 Ayurvedic , 33 PAC, 8 medical aid centres, 1 T8 Centre, 132 family planning centres and 7 Laparoscopic centres as recorded in 2001 census.

**PHE** drinking water population benefited is 138 lac with 168 villages census 2001 refers.

The population statistics of srinagar is as follows:

<u>Srinagar</u>		<u>Density</u>
Population	= 1202447	540/ sq. kms
Area	= 2228 sq. kms	
Rural	= 122347	
Urban	= 430609	

Year	Towns	Inhabited villages	Un-habited	Total
1971	2	200	8	208
1981	3	168	7	175
2001	3	168	2	170

- ∴ Work force in Srinagar in 2001
- ∴ Cultivators
- ∴ Household industry

## **HOUSING**

- ∴ Census house total
- ∴ Vacant Houses
- ∴ Residence

817778

17461

51536

128241

8156

67067

∴	Shop-cum-residence	952
∴	Total Households	168232
∴	Institutional Houses	392
∴	Occupied Residential Houses	78623
∴	Total area according to village papers	51007 ha
∴	Area under Forests	1688
∴	Land put to non-agriculture use	7988
∴	Barren and un-cultivable land	4330
∴	Total	12318

Sri nagar Area 2228sq kms

Year		Population Density / Sq.	
		Kms	Area
1951	390828	531	2228
1961	440135		
1971	558864		
1981	708328		
1991	942200		
2001	1183493		
2004-05	1202447	540	2228

Year	Anantnag	Population Density / Sq.	
		Kms	Area
1951	362209	362209	398
1961	401461		
1971	518122		
1981	656361		
1991	881700		
2001	1170013		
2004-0	1172434		

Year	Doda	Population Density / Sq.	
		Kms	Area
1951	229876	59	1169
1961	262473		
1971	342220		
1981	425262		
1991	544700		
2001	690474		

Year	Kathua	Population Density / Sq.	
		<u>Kms</u>	<u>Area</u>
1951	195840	205	2651
1961	210806		
1971	274671		
1981	369123		
1991	450100		
2001	544206		

Year	Rajouri	Population Density / Sq.	
		<u>Kms</u>	<u>Area</u>
1951	177789	182	2630
1961	171529		
1971	217373		
1981	302500		
1991	382300		
2001	478595		



<b>Year</b>	<b>Poonch</b>	<b>Population Density / Sq.</b>	
		Kms	Area
1951	147489	222	1674
1961	154532		
1971	170787		
1981	224197		
1991	2901100		
2001	37156		

<b><u>Year</u></b>	<b>Baramulla</b>	<b>POQulation</b>	
		<b>Densit~ / Sg.</b>	
		<u>Kms</u>	Area
1951	359526		4588
1961	392192		
1971	517900		
1981	670142		
1991	889400		
2001	1166722		

<b><u>Year</u></b>	<b>KUQwara</b>	<b>POQulation</b>	
		<b>Densit~ / Sg.</b>	
		Kms	Area
1951	187076	269	2379
1961	204073		
1971	257824		
1981	328743		
1991	461800		
2001	640013		



ON depots scattered in the city

A view of cargestion due to urban sprawl  
outside the main wall of Bum Hall School.

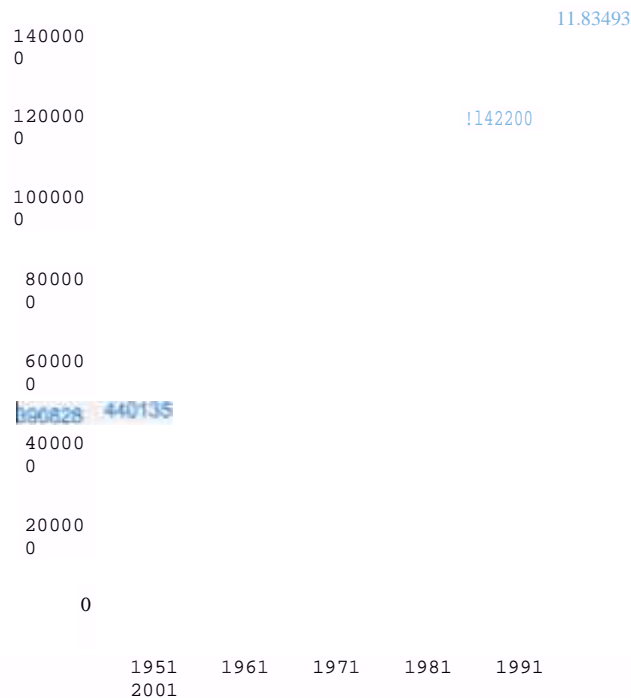


## INFERENCES

The population of Srinagar City is 120244 lac as per the latest statistical data with density as 540/Sq km and area as 2228 sq kms .

The population data is:

<u>Year</u>	<u>Population in lacs</u>
	390828
1951	440135
1961	558664
1971	708328
1981	942200
1991	1183493
2001	



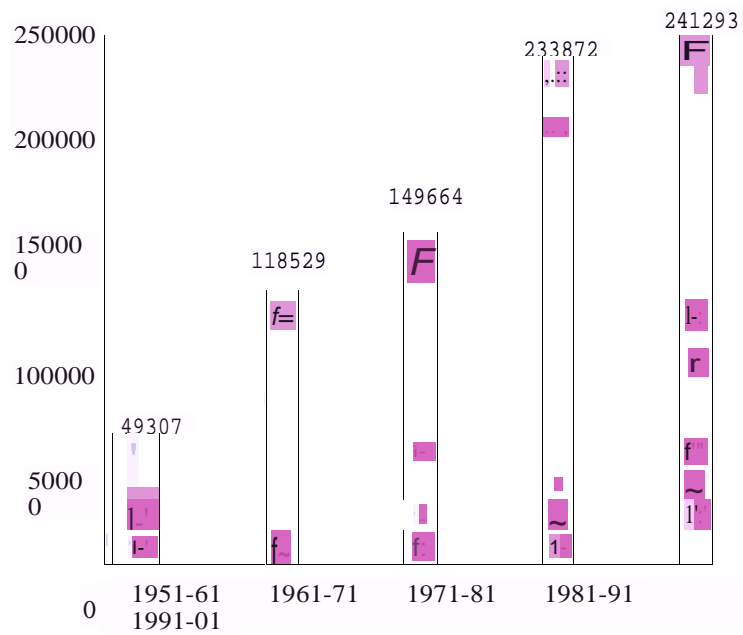
This is inclusive of new separate district of Ganderbal which was carved out of Srinagar District in 2008. No Survey has been carried yet separately for this district so far.

The Decadal variation is 792665.

-61	Population
1961-71	49307
1971-81	118529
	149664

1981-91	233872
1991-01	241293

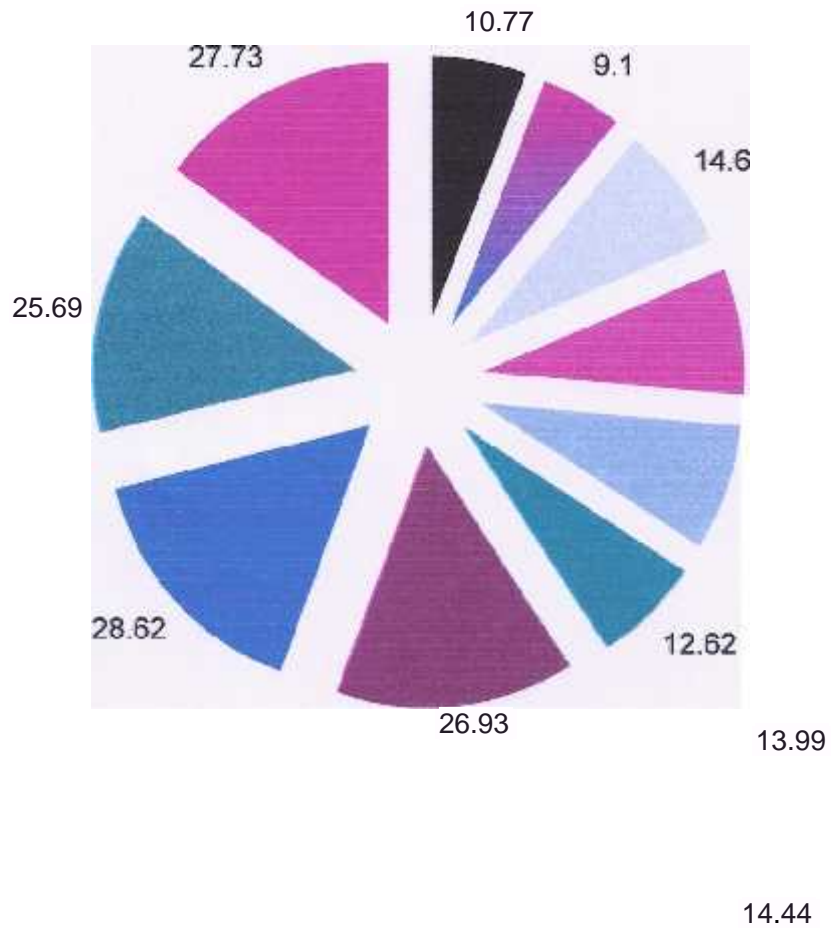
**Graph Showing Decadal variation**



Percentage decadal variation is

1901-11	10.77
1911-21	9.10
1921-31	14.60
1931-41	13.99
1941-51	14.44
1951-61	12.62
1961-71	26.93
1971-81	28.62
1981-91	25.69
1991-01	27.73
<b>Total</b>	<b>276.56</b>





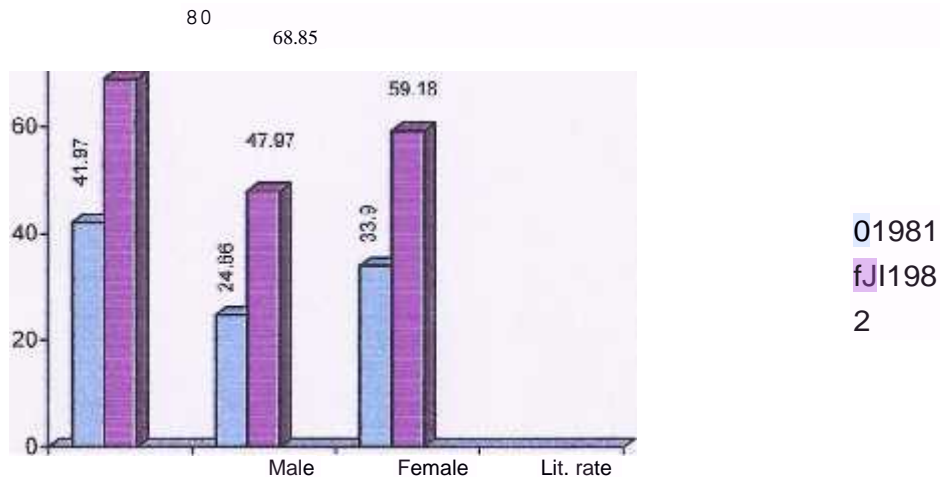
**PIA CHART SHOWING PERCENTAGE DECADAL VARIATION**

The literacy rate in 1981 and 2001 was:

Year	Category	Literacy rate
1981	Male	33.90
	Female	24.66
2001	Male	59.18
	Female	







BAR CHART SHOWING THE LITERACY RATE IN 1981 AND 2001

In a span of 50 years, the population of Srinagar city has increased at a percentage of 276.56 with a whopping increase of 792665 lakhs. The area is same as 2228 Sq km.

Increased population brings so many related problems with it. There are major health risks involved due to increased population which compounds pollution problems. Premature death and illness due to major environmental health risks amount to nearly 20 of the total burden of the disease.

Increased population had both category environmental risks i.e. traditional hazard due to poverty and lack of development such as lack of safe water, inadequate sanitation and waste disposal which is of utmost concern of the city of Srinagar and has taken a heavy toll of our water bodies and indoor pollution ( of which the women of the city are the victims). Environment of Srinagar city has deteriorated due to unplanned urbanisation, industrialization and indiscriminate use of pesticides in agriculture.



The total waste generation in Srinagar has increased. Here we do not have any separate waste treatment system of bio-medical waste which is being mixed with municipal waste causing many diseases which will be difficult to detect if the trend continues. The rag pickers are a very dangerous health risk.

The two slaughter houses of Srinagar city, one at Zaldagar and other at Rainawari are another serious concern for the urban planners.

The projected population of Sri nagar city for the year 2007 (based on projections of 2001 census) is 11677701 in municipal areas and 13,24002 including the areas outside the municipal area. At present, the number of households in 68 wards falling under the Srinagar municipal Committee is 169720. Apart from Bakr-Eid, more than 3000 animals are sacrificed every day as per Srinagar Municipal Committee figures, however, the unofficial figures put the number between 10-15,000. The expected wasted at 2.5 Kg per animal works it to 7.5 ton per day meaning thereby that population increase has brought tremendous problems to the city of Srinagar. Apart from serious pressure on the natural resources, the city has become congested and civic facilities are equal to naught. The solid waste disposal site at Achan is a nuisance for the population who are living in its vicinity and for the municipal authorities who are not managing it scientifically as per the guidelines of the solid waste management and Handling Rules 1998 issued under the Environmental Protection Act 1986 by the Ministry of Environment and Forests, Government of India.

## **AGRICUL TURE**

Srinagar District has more than 62227 farms operating families

(FOE), having an average holding size 0.36 hectares spread over in

320 villages. Against the total reported area of 51000 hectares, only about 24000 hectares are available for bringing under cultivation per season. Irrigated area available for cultivation of major crops is 17200 hectares

Paddy and Maize is grown on an area of 13000 hectares and 4600 hectares respectively; Pulses are grown on an area of 1700 hectares during Kharief and 1700 hectares during Rabi. Similarly, 5700 hectares are covered under fodder crops (both seasons). The total area covered under vegetable crops is about 4800 hectares during 2002-03. Needless to mention that popularizing oil seeds, pulses and fodder cultivation is the thrust area aimed at to achieving multiple cropping patterns in the District.

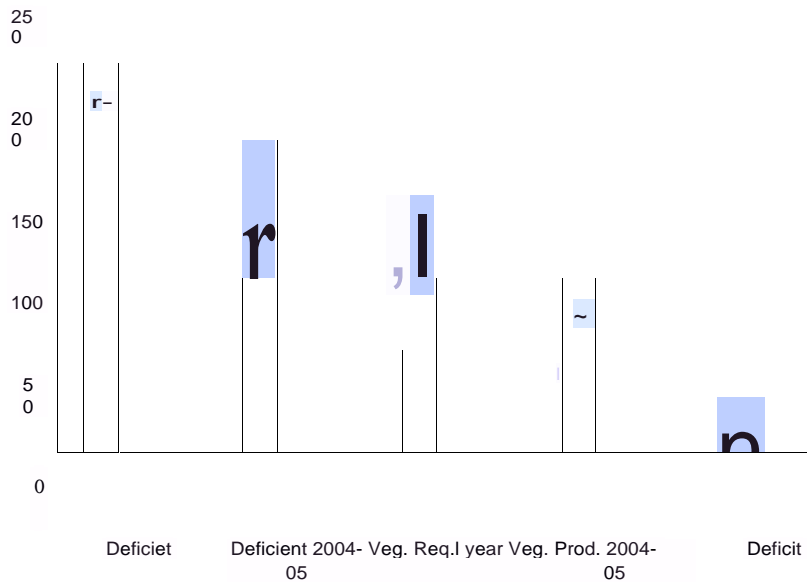
The primary reasons for low yields are small average size of holding which the urban sprawl has brought with it due to land use change into mostly residential centres, adoption of primitive/obsolete agriculture crop production techniques, sustainability of major crop varieties to plant disease etc. Emphasis of the department is on improving productivity per unit, area and time by seed replacement, balanced fertilizer application, irrigation management on plant protection measures and increase in the per holding capacity. However this is becoming increasingly impossible due to huge concrete construction activities going on and migration from rural areas leading to urban sprawl.

During 2002-03 out of total outlay of Rs. 41.70 lacs under Crop Husbandry in Agriculture Sector, the expenditure was Rs. 41.646 lac. Under T & V Sector total outlay of Rs. 140.58 lac available under revenue component only was spent in full. Like wise, an amount of Rs. 3.90 lacs, was earmarked under Agricultural lands, which stood spend to the extent of Rs. 3.3231 lacs.



The food scenario of the district is as follows:

∴	Per. Capita annual food requirement@ 500 gms/day/per year =1.83 qtls	
∴	Total/Food Requirement for the distt.! year = 217 (000 MTS)	
	Food production during 2004-05	= 52.27 (MTS)
	Deficit	= 164.73 (MTS)
∴	Per Capital annual requirement of Veg. @ 285 gms/day/year= 1.04 (MTS)	
	Total Vegetable requirement /year	= 123.08 (MTS)
	Total Vegetable production during 2004-05	= 94.00 (MTS)
	Deficit	= 29.08 (MTS)



**BAR CHART SHOWING FOOD SCENARIO OF THE DISTRICT**

During 2004-05 out of total outlay of Rs. 47.69 lakhs under Crop Husbandry in Agriculture Sector, the expenditure was Rs. 46.31 lakhs.





The Jammu and Kashmir State is a mountainous agricultural zone and like the other mountainous agricultural zones of the world has limited area available for crop production to feed population comprising of 1.25 crore souls. Having a geographical area of 2.12 lac km, state has a net cultivable area of only about 7.5 lac hectares. While double cropping is a regular feature in Jammu Division and in Kashmir Valley, only one crop is possible in the cold arid region of Ladakh. Agro climatically the State is divided into four distinct zones i.e. cold arid zone of Ladakh Region, temperate zones of Kashmir valley, sub-tropical zone of Jammu and Intermediate zone comprising of Doda, Rajori, Poonch and some parts of Udhampur. By virtue of varied climatic conditions, nature has bestowed the state potential for diversified Agriculture farming.

#### **Comparative Agricultural Statistics of Kashmir and Jammu Division**

	<b>Kashmir</b>	<b>Jammu</b>
Geographical Area	1 .12 Lac km	1.00 Lac km'
Net sown Area	3.58 Lac ha	3.86 Lac ha
Gross cropped area	4.60 lac ha	6.20 lac ha
Irrigation	2.11 lac ha'	1 .00 lac ha
Un-irrigated	1 .48 lac ha	2.86 lac ha
No. of operation holding (FOF's)	7.47 lacs	5.88 lacs

#### **AVERAGE HOLDING SIZE**

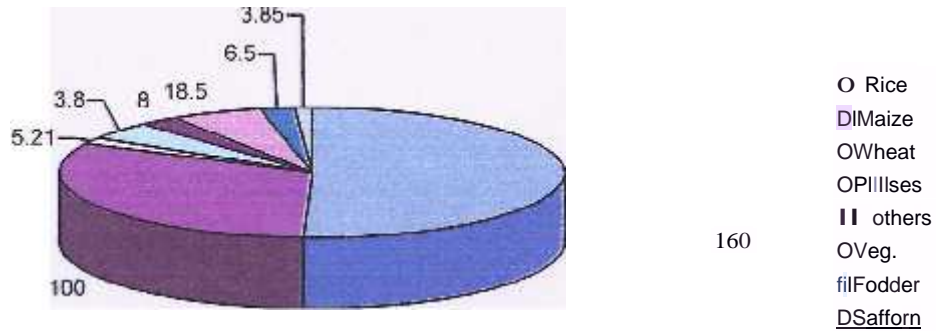
Kashmir Valley	0.53 ha	0.76 ha
Ladakh Region	1.08 ha	

Rice, Maize, vegetables and Pulses are the major crops cultivated during Kharif season while Oilseed, Fodder, pulses and vegetables are the main crops grown during the Rabi season in Kashmir Division.

**CROP PRODUCTION:**

S.No	Crop	Area (000 Hectares)	Production (000 M.Tonnes)	
			Target	Achievements *
<b>KHARIF 2006</b>				
1	Rice	160.00	450.00	400.00
2	Maize	100.00	150.00	125.00
3	Wheat	5.21	10.50	10.00
4	Pulses	13.80	14.00	13.80
5	Others	8.00	8.00	8.00
6	Vegetables	18.50	425.00	410.00
7	Fodder	6.50	200.00	200.00
8	Saffron	3.85	1500t1s	150 Otis (Estimated)

*\*The targets for Kharif Production 2006 could not be achieved in full due to the occurrence of floods, which damaged standing crops on thousands of hectares.*



**PIE CHART SHOWING CROP PRODUCTION**

S.No	Crop	Area (000 Hectors)	Production (000 M. Tonnes)	
			Target	Ach (Estimated)
RABI 2006-07				
1	Wheat	2.43	5.00	-
2	Oilseed	80.00	90.00	-
3	Pulses including Peas for vegetables	10.00	150.00	-
4	Vegetables	8.22	150.00	50.00 (till date)
5	Fodder	28.31	900.00	-



## PRODUCTION/REQUIREMENT / PERCENTAGE DEFICIT AT A GLANCE

S. No.	Particular	Requirement	Targeted Production	Achievement
			2006-07	2006-07
a)	Food Grains	10.35	642.50	566.80
b)	Vegetables	6.00	575.00	560.00
c)	Oilseed	2.58	90.00	85.00

Although, there has been substantial increase in production year after year, but we are far behind in bridging the gap between the Requirement and production in most of the crops like cereals and oilseeds.

### VEGETABLES

Gross Area (000 Hectares)		Production (000 M.T.)		
		2005-06	2006-07 (Target)	Likely Achievement 2006-07
2005-06	2006-07			
24.00	26.70	525	590	565

### FLORICUL TURE

The Department foresees Commercial Floriculture as a Buzzword and a leading commercial activity in the Agriculture Sector in Kashmir Division during the 11 th Plan Period. Both the Regions viz Kashmir Valley and Ladakh Region are suited for promotion of commercial Floriculture activity. Although growers from the Valley are selling / exporting cut flowers, flower seeds, loose flowers and ornamental plants with good revenue returns but we can do much more and can earn huge revenue by such eco friendly agricultural practices ..



Urban sprawl has led to a situation where the land use has been changed extensively and there is little land available for eco friendly activities.

### **Cultivation of Aromatic Plants:**

Up to the year 2005-06, 50.0 hectares have been brought under the cultivation of Bulgarian Rose while expansion over 20.0 hectares is the target for the current year.

<u>Activity</u>	<u>Unit</u>	2003-04	2005-06	2006-07	<u>Expansion</u>
		(Base Year)			
Cut Flower production	Hectares	80	125	150	70
Flower Seed Production	Hectares	5	10	15	10
Establishment of Nurseries for the production of Ornamental Plants	Hectares	5	15	25	20
Entrepreneurs covered under Plant Production scheme	No.	50	150	200	150

**Statement showing the year -wise Floriculture Plant Material produced on commercial lines (*public & private sector*) for the last three years**

S.No	Year	Cut Flowers	Loose Flowers	Ornamental Plants	Flower seeds	Rev. Generated
		Lac No's	Otis.	Lac No's	Otis.	Rs. in Lacs
1	2005-06 (Targets)	100	150	251	20	300.00
2	Ach. 2005-06	70	110	15	12	200.00
3.	2006-07 (Targets)	100	150	25	20	300.00
4	Ach. 2006-07	80	120	18	14	230.00

<i>Pesticides</i>	Samples		Samples	
	Received	Analyzed	Standard	Non-standard
2004-05	226	247	.238	09
2005-06	219	206	186	20
2006-07	391	373	331	42
<i>Fertilizer</i>				
2004-05	303	303	303	-
2005-06	205	232	224	8
2006-07	264	290	276	14
<b>Seeds</b>				
2004-05	520	520	342	178



2005-06	241	241	160	81
2006-07	710	710	553	157

## AREA AND PRODUCTION -SAFFRON

<u>Year</u>	<u>Area(hectares</u>	<u>Production (Qtl)</u>
2004-05	3830	125.00
2005-06	3830	135.00
2006-07	3850	150.00 (Target)

## Export of Saffron outside the County

<b>Year</b>	<b>Qty. Exported (M. Tonnes)</b>	<b>Foreign Exchange Earned (Rs. in Crores)</b>
2002-03	5.78	2.58
2003-04	6.98	3.06
2004-05	5.19	2.09

It must be marked that the saffron crop requires irrigation at critical stages of crop growth viz. pre-flowering irrigation in autumn and post harvest irrigation for corm multiplication.

At present the saffron crop is dependent on rains for meeting its water requirements especially at the above stated stages. The yield decrease is a clear example of urban sprawl. We have changed the entire land use of our important saffron growing areas and the irony of the matter is that many industrial units have also come up in its close vicinity apart from many residential houses. The ban on landuse change is just in the papers. This has created a very serious situation for the city dwellers.

## FERTILIZERS

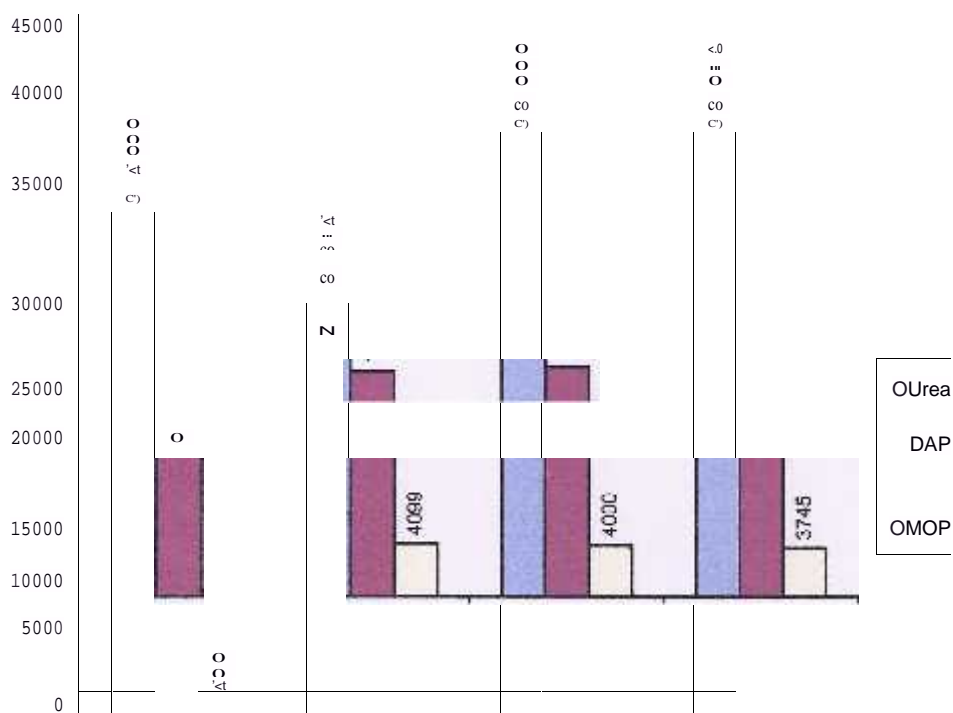
The fertilizer Off-Take has been steadily increasing in Kashmir Division, as a result of which per hectare consumption is

also showing upwards swing. The off-take of fertilizers during 2005-06 and Kharif 2006 is given here under:

FERTILIZER OFF-TAKE DURING RASI 2005-06, KHARIF 2006  
AND TARGETS RASI 2006-07

Kind	Rabi 2005-06		Kharif2006		Rabi 2006-07 (Targets)
	Target	used	Target	Used	
Urea	34000	25894	38000	38096	31075
DAP	15000	17643	18000	14500	25900
MOP	4000	4099	4000	3745	5000
NPK	-	1985	-	3952	4000

It is inferred from the chart that the fertilizer use has shown an up ward trend due to the use of more land.



Bar Chart showing Fertilizer Off-ta ke during Rabi 2005-06. Kharif 2006 and targets Rabi 2006-07

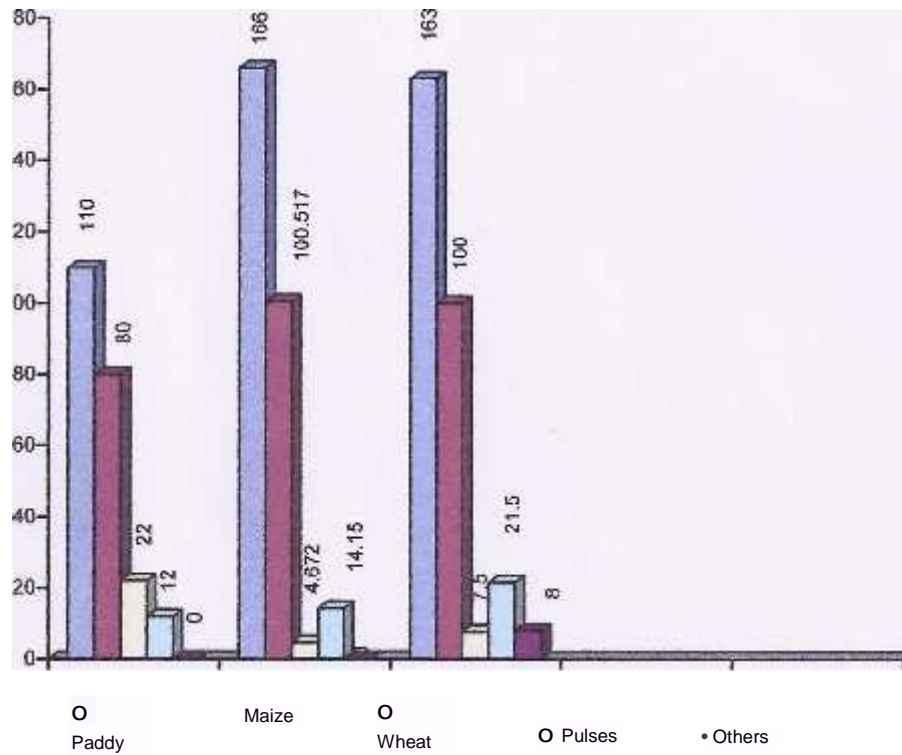
Abridged Account of Area, Production and Productivity since  
tndependence

## AREA UNDER FOOD CROPS.

Area=000 Hectares

Crop	1950-51	1980-81	2005-06
Paddy	110.00	166.00	163.00
Maize	80.00	100.517	100.00
Wheat.	22.00	4.672	7.50
Pulses	12.00	14.15	21.50
Others	N.A	N.A	8.00
<b>Total</b>	<b>224</b>	<b>272.28</b>	<b>300.00</b>

1950-51                      1980-81                      2005-06



Bar Chart showing Area under Food Crops

**Food Grain Production in relation to population Growth  
Production/ Requirements**

Year	Production	Population	Requirement	Deficit
1950-51	206.30	17,95,304	307.00	32
1980-81	486.92	32,69,276	559.05	23
2005-06	620.00	59,85,340	1023.49	40

Production/Requirement: as per Minimum Nutritional Standards of Cereals= 420 grams/day/head, pluses=50 grams/day /head.

**Comparison between Growth in Population and Food production.**

Year	Population (Lac)	Increase in population over the period	Increase in production over the period (000. Tonnes)	Population/Production Ratio	Requirement for increased population (000 Tonnes)	Surplus (000-Tonnes)	Deficit (000-Tonnes)
1950-51	17.75	-	-	-	-	-	-
1980-81	32.70	14.75	280.00	1:20	255.00	35.00	-
2005-06	59.85	27.15	124.00	1:4.5	467.00	-	343.00

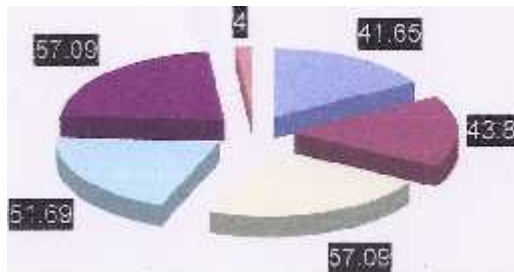
In reference that can be drawn from the above Table is that the against 2.5 increases in population annually, the Food Grain production increases by just about 1.0. This is mainly due to the urban sprawl in Sri nagar city because the maximum migration happened in Srinagar city partly due to untoward security scenario, presence of all professional and other colleges and other facilities which people generally do not enjoy in rural areas.

Post Independence scenario of Production & Population increase 1950-51 to 2005-06.

In crease in Production (Base Line 1950-51 to 2005-06  (OOO.Tonnes)	In crease in Production (Base Line 1950-51 to  2005-06	Requirement of Increased Population  (OOO.Tonnes)	Deficit (000- Tonnes)
410.00	43,90,036	750.69	340.00
55	73.70		45

A deficit of 45 means a lot .Urban sprawl has brought so much of food scarcity to us which will prove disastrous for our future generations, The city is growing in an unplanned way and land is being utilized for residential and commercial purposes mainly creating concrete jungles in sri nagar city with malls and shopping complexes all over.

### **AGRICULTURE EXPENDITURE YEAR-WISE**



### **AGRICULTURE EXPENDITURE YEAR-WISE**

The expenditure on agriculture has increased marginally and the deficit is much higher than the expenditure. Urban sprawl has made its impact felt on every sphere of our economy.





## HORTICUL TURE

District Srinagar has unique agro-climatic zones which allow not only the cultivation of apple, pear and walnut but also the cultivation of grape, pomegranate and chestnut. An area of 11,267 hectares is under fruit cultivation in the District, out of which 7,165 hectares are covered by fresh fruits like apple, pear, cherry, peach, plum, apricot etc. and 4,102 hectares are covered by dry fruits mainly walnut and almond. The production of fresh fruits was recorded at 47,580 MTs and that of dry fruits at 4,544 MTs during 2002-03. Although both the area and production of fruits in the district has increased consistently but the drought for last three years has proved a great hindrance particularly, in rain fed areas which comprise about 65-70 of total horticultural area.

An area of 11936 hectares is under fruit cultivation in the District, out of which 7580 hectares are covered by fresh fruits like apple, pear, cherry, peach, plum, apricot etc. and 4356 hectares are covered by dry fruits mainly Walnut and Almond. The production of fresh fruits was recorded at 56648 MTs and that of dry fruits at 7120 MTs during 2004-05 ..

Kind	Area & Production under fruits 2007-08		
	Area (Ha)	Production (M. Tonnes)	Productivity
Fresh	131086	1362582	10.40 .
Dry	64856	133088	2.05
Total	195942	1495940	7.64

### STATEMENT SHOWING KIND-WISE / DISTRICT WISE YEAR WISE AREAL PRODUCTION UNDER MAJOR HORTICULTURE CROPS OF DISTRICT SRINAGAR

S.No.	Kinds of Fruits	2002-03		2003-04		2004-05		2005-06		2006-07		2007 -08	
		Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.	Area	Prod.
1.	Apple	4419	38572	4603	43106	5193	43103	5408	45263	5832	47978	2152	19100
2.	Pear	394	3084	423	3438	443	3438	532	3610	532	3621	442	2230
3.	Fresh	105	295	105	418	105	418	160	439	169	456	149	62



4.	Apricot	6 8	144	79	229	79	229	83	241	83	258	58	59
5.	Plum	4 1	1409	415	1321	415	1321	424	1387	455	1466	241	772
6.	Cherry	1 4	3506	1572	4805	1577	4805	1589	5159	1661	5495	1165	2415
7.	Grapes	8 2	220	91	161	91	161	98	195	98	195	12	3
8.	Citrus	0	0	0	0	0	0	0	0	0	0	0	0
9.	Olive	0	0	0	0	0	0	0	0	0	0	0	0
10.	Other Fresh	2 1 9	350	277	1466	277	1466	283	1539	350	1568	222	2600
<b>Total Fresh</b>		<b>7 1</b>	<b>47580</b>	<b>7565</b>	<b>54944</b>	<b>8180</b>	<b>54941</b>	<b>8577</b>	<b>57833</b>	<b>9180</b>	<b>61037</b>	<b>4441</b>	<b>27241</b>
<b>DRY FRUITS</b>													
1.	Walnut	310 8	4189	3263	6255	3684	6567	3789	6896	3926	7412	623	1830
2.	Almond	871	214	912	282	932	395	946	415	974	439	870	77
3.	Other Dry	123	141	131	146	141	150	163	155	247	164	77	141
4.	<b>Total Dry</b>	<b>410 2</b>	<b>4544</b>	<b>4306</b>	<b>6683</b>	<b>4757</b>	<b>7112</b>	<b>4898</b>	<b>7466</b>	<b>5147</b>	<b>8015</b>	<b>1570</b>	<b>2048</b>
<b>Grand Total</b>		<b>112 67</b>	<b>52124</b>	<b>1187 1</b>	<b>61627</b>	<b>1293 7</b>	<b>62053</b>	<b>13475</b>	<b>65299</b>	<b>1432 7</b>	<b>69052</b>	<b>6011</b>	<b>29289</b>

### **Public health Engineering**

**The water supply is an essential feature of any urban centre. as the urban sprawl brings many problems with it, the city of Srinagar is facing lot of environmental pressure on the supply of pure water to the city dwellers. The water sources are dwindling due to urban sprawl and increased sanitation problems which sends untreated domestic waste to our water courses making it difficult to use and breeding many water borne diseases.**

**STATEMENT SHOWING THE NUMBER. OF CONNECTIONS AND**

ACCUMULATED ARREARS

**A. Private Pipe Connections (PPC's)**

<b>1.</b>	<b>Domestic</b>	<b>197746</b>
<b>2.</b>	<b>Commercial</b>	<b>1842</b>
<b>3.</b>	<b>Govt.</b>	<b>1394</b>
	<b>Departm</b>	<b>200982</b>
	<b>ents</b>	
	<b>Total A</b>	

B. Public Stand Posts (PSP's)

1.	Srinagar Municipality	2761
2.	Town Area Committee	1378
3.	Notified Area Committee	2594
	Total A	6733

Total A+B = 27715

Amount in lakh

S.No	Particulars	Arrears as on 31.3.2007	Assessment on 2007-08	Realization 2007-08	Accumulated arrears as on 31.03.2008
1.	T PPC's	1791.10	660.24	400.34	2051.00
2.	I PSP's	449.90	56.60	0.00	506.50
	Total	2241.00	716.84	400.34	2557.50

BREAK UP OF ABOVE ARREARS

A. Private Pipe Connections PPC's

~ Govt. Departments	228.06
~ Private & Commercial	1822.94
~ Total A	2051.00

B. Public Stand Posts (PSP's)

~ Government Departments	228.06
~ Private & Commercial	1822.94
Total B	251.00

Total Accumulated Areas as on 31.3.2008 (A - B) = 2557.50

Safe drinking water and its supply is one of the basic amenities of life as well as the key programmes of our developmental plans. Its necessity and importance for human population can be described next to air. Water supply programme in

the state is being funded mainly out of the state resources and partly under CSS.

Safe drinking water supply system to the Srinagar city has been under tremendous pressure all the time. The system has definitely undergone expansion but the supplies have all along lagged far behind the demand. For bridging the gap between demand and supply, various schemes have been taken up.

The schemes aim at augmentation of water supply to great Srinagar city to the extent of 16.25 MGD excluding 10 MGD Tangnar which has now been approved under NURM.

Srinagar city is expanding in every direction. New colonies have come up and the existing system which is old aged needs improvement due to tremendous urban sprawl .It has created immense pressure on the basic life amenities and the drinking water is the basic necessity. The present water supply position is as follows in the Srinagar district.

<b>Sr. No.</b>	<b>Name of the Constituency</b>	<b>TOTALA+B</b>
A	<b>Ganderbal</b>	
1.	Baba Salai	
2.	Rangil	
3.	Baba Darya - Din	
4.	Dignibal	
5.	Nursery	
	<b>TOTAL</b>	
	<b>Kangan</b>	
1.	Wassun Kangan	
2.	Nursery Ganiwan	
	<b>HAZRATBAL</b>	
1.	Chatter Hama	

**Areas  
Covered**

20 Hac

15 Hac

12 Hac

30 Hac

2 Hac

**79 Hac**

30 Hac

1.50 Hac

21 Hac

131.5 Hac

## **SOIL CONSERVATION**

The rapid growth of human population and urban sprawl during the last few decades has generated increased demand on the forests to the extent that at numerous places, forests could not sustain to the demand and thus resulted in degradation. Besides due to increase in human population coupled with changing life style of the people, urban sprawl has not only increased pressure on the forests but also resulted in floods and damage to Irrigation systems and rise in river bed levels. The need of the hour, therefore, is to conserve soil and water insitu through planned developmental plans and arresting the haphazard urban sprawl. Conservation of water automatically conserve the soil and increases productivity of land. Efforts have to be made to upgrade carrying capacity of land and other areas to make them more beneficial for the use of human population.

## **FISHERIES**

The District Sri nagar offers great potential for the development of fish and fisheries having such areas of development as Dal Lake, Anchar lake and high altitude lakes viz Kishensar, Vishensar, Gangbal etc. as also Sind trout stream. The total number of registered mahigirs in the district is about 2600. These fishermen who live below poverty line, derive their livelihood by exploiting the fisheries wealth of water resources of the district.

An effort could be made to utilize our water resources of the district in an planned way so that urban sprawl is minimized and water related acitivities are increased in order to minimize pressure on our land resource.