FINAL

DISTRICT-DRIVEN GROWTH

A PILOT STUDY FOR MAKING INDIA A $5 TRILLION ECONOMY

REPORT FOR SOLAN DISTRICT

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EXECUTIVE SUMMARY

1. Introduction

The Department of Industrial Policy and Promotion (DIPP), under the aegis of Hon. Minister of Commerce & Industry, has set an agenda to prepare a strategy to make India a $ 5 Trillion economy by 2025. To achieve this, it is realised that a bottom-up approach should be followed, with districts as planning units. This approach would involve the districts more actively in the future growth of the Indian economy, allowing policymakers at all levels to formulate a holistic development vision. Keeping this in view, it is aimed to undertake action-oriented policy research at the district level to enable districts to achieve an additional 2-3 per cent growth by 2025.

The foundation to meet this agenda has been laid with the identification of 6 pilot districts for which District Strategies Plan will be prepared. NCAER has prepared the same for Solan (in HP), Ratnagiri and Sindhudurg (in Maharashtra) and is presented in the present report.

This report outlines the Context of the study, Brief Economic and Infrastructural Profile of the District and presents the strengths, weaknesses, opportunities and threats for the potential sectors of growth which are expected to trigger growth in the district, faster than others. A list of Tentative Recommendations is also presented for each sector.

2. District Overview

Solan, created on 1st September, 1972, is one of the twelve districts in Himachal Pradesh. It is the largest Municipal Council of Himachal Pradesh. The district is popularly known as the "Mushroom city of India" owing to the vast mushroom farming in the area and to the presence of Directorate of Mushroom Research (DMR) at Chambaghat. It is also known as the "City of Red Gold", due to bulk production of tomatoes.

The population of Solan district as per census, 2011 is 5.77 lakh persons which is about 8.5 per cent of the total population of Himachal Pradesh. The district's population density is 298 persons per square kilometre, close to state density of 300 persons per sq km. The sex ratio is 880 men per 1000 women. The average literacy rate in the district is 83.7 per cent (2011 Census). The literacy rate of men is 89.6 percent and that of women is lower at 77 percent. Work force participation rate in the district is 51.5 per cent. This, for women, is much higher (40.0 percent) than the national average (17.8 percent). About 3 percent of total labour-force is not actively working but is willing to work.

The economy of the district is largely driven by its industrial activity, which account for nearly 80 percent of the district GDP. Within industry, the most prominent sectors are pharmaceuticals, textiles, corrugated boxes and food processing. Baddi, an industrial area in Solan, is known to be the largest pharmaceutical hub in Asia.

Agriculture accounts for less than 5 percent to the district GDP. Nonetheless, it is the biggest employer among all the sectors. The district is a hub for horticulture produce and is popular




for its exotic high-valued vegetables and fruits like broccoli, coloured capsicum, kiwi, apricot etc.

Services contributes about 15 percent to district GDP but is increasingly becoming the key contributor to overall district growth. Tourism and Education are key service sectors.

On Ease of Doing Business, Himachal Pradesh stands at 16th position among all the states of India on implementing Ease of Doing Business Reforms. It is labelled as "Fast Movers". On indicators of household amenities, Solan positions itself much ahead of national averages. The district is blessed with favourable terrain, proximity to tri-cities of Chandigarh, Mohali and Punchkula, adequate and cheap power supply, high phone and mobile density and peaceful environment. The district is just 61 km away from the nearest airport, located in Shimla, and 77 km away from Chandigarh, the largest airport in the region. On road connectivity, Solan has shown an impressive growth in road length. However, connectivity with the industrial areas in the district has been a challenge and continues to constrain Solan from realising its potential in industrial and agro-based development.

The State is implementing a number of industrial schemes like Industrial Development scheme, Mukhya Mantri Swavlamban Yojana, State Mission on Food Processing, Pradhan Mantri Employment Generation Scheme, Chief Minister Start-up Scheme. These have benefitted entrepreneurs and workers in Solan. Among the agricultural schemes, Solan gets particular benefit from Pilot Weather based crop insurance scheme.

The assessment of the above contributors poises Solan to grow on a fast-track, and in order to realise its potential, the following actions are recommended:

3. Recommendations

i. Industry and related

- Industrial plots may be allotted only after the basic infrastructure is in place. In Mamlig industrial area, for example, electricity is not yet available and plots have been allotted.
- Cluster development programme for pharma sector (CDP-PS) and Pharmaceutical promotion development scheme (PPDS) may be implemented to promote and develop the pharma sector.
- Subsidy support may be considered for Drug Testing Laboratories in the HP, as given to those in other Special Category States (SCS).
- Consider making exemptions in mandates to comply with the norms of USFDA for drugs and medicines, as this compliance turns out to be very expensive.
- Mandate to employ a minimum of 80 percent labourers from within the State to be relaxed for industrial units. Solan, being highly industrial and hence labour intensive, needs labour much higher in number than available in the district, and such a relaxation will also prevent mis-reporting practices.

ii. Promoting horticulture and food-processing

- Marketing strategies, especially for agricultural produce, to be made innovative.
- Exotic herbs, available in abundance, may be processed to high-value products like essence oil or aromatic oil for food, cosmetic and healthcare products.
- Explore the opportunities for legalising the cultivation of cannabis (hemp), which grows abundantly in the State. Recently, the neighbouring state, Uttarakhand, became the first Indian state to legalise the cultivation of hemp crop, purely for industrial purposes. This may be tested in HP for yielding high-quality fibre, and for industrial and medicinal uses.
- A greater budgetary allocation to development of poly-houses may be evaluated for costs and benefits. The budget currently allocated is not sufficient to meet the huge demand, and farmers / entrepreneurs suggest that these activities cannot be promoted using own capital as many farmers will not be able to underwrite the risks.
- Post-harvest management, cold storage and suitable air-conditioned transportation systems / vehicles may need to be arranged to bring efficiencies in the transport of perishable horticulture and floriculture items.
- The strategy of promoting rural industrialisation through food processing is appropriate for Solan since there is an abundant availability of raw material from agricultural produce. Also, there is availability of labour and huge market demand from the district, neighbouring States, and even from the export market.
- New marketing strategies will need to be developed to market the horticulture and floriculture produce from the district, that are produced in abundance and round the year using Protected Cultivation.
- Amongst the recommendations have included enabling systems and linkages for the farmers to earn the greatest portion of the consumers' rupee. One of the suggestions was to exploring whether a State undertaking like the HPMC may be best-placed to procure and market agriculture produce thus enabling a better market realisation for producers than they are able to earn from the chain of middle-men.
- Agricultural skills' training needs to be imparted to promote cultivation of high-valued and high-demand crops like exotic fruits, flowers, mushrooms, etc. These skills may include flower handling, packaging and palletising; nursery-raising; production of vermi-compost; watershed management; installing and fitting of greenhouse, and so forth.
- Protected Cultivation should be used for growing exotic vegetables and also flowers that have a high market-value and have good market.
- More varieties of mushroom should be grown. At present, only button mushroom are grown in the district. Other popular varieties should be cultivated like oyster mushroom or Portobello mushroom.

iii. Promoting Tourism

- Promotional campaigns may be launched to boost tourism, especially among foreign tourists, to existing and new tourism destinations in Solan.
- The Process of setting up hotels and lodging houses may be reviewed and the process made easier. According to the District Department of Tourism, obtaining a No-Objection-Certificate (NOC) for hotel registration takes an average of two years because of infrequent Gram Sabhas that provide these NOC certificates. There are other clearances also to be sought, like from the Forest dept. and the State Pollution Control Board etc. It is recommended that in order to save time, the unit should send the requisition application directly to DC Office who should then send it simultaneously to various departments for clearances, or a similar single-window clearance may be implemented.
- New tourist destinations like the artificial lake in Solan, or recreational and amusement parks, may be studied for their feasibility and promotion. For instance, there is a natural stream in Sadhupul, a village between Solan and Chail, that is said to be a potential site for a lake for recreational activities for tourists, like boating, food stalls, water sport etc. According to the Tourism department, the local people are even willing to give away land for this purpose as they realise that these generate various employment and business opportunities.
- Some of the most popular tourist destinations in Solan, e.g. Garkhal in Kasauli town, suffer greatly due to heavy traffic jams. Alternative routes should be developed.
- The State may attract private players to develop new tourist destinations through PPP mode, by providing incentives and easing barriers to entry.
- The hotels in HP are controlled by the Tourism Department on setting up their tariff structure and on maximum discounts they can offer during off-season time. This regulatory control may be abolished as is the case in Delhi or Haryana. This will give the hotels flexibility to fix tariff and earn profits during both season and off-season months.
- The private web-portals for hotel booking, like Oyo, Make my trip etc. should be regulated.

iv. Skills development and human resources development

- The State and district may invite parties for setting up new private schools, with good infrastructure and trained teachers, in the district.

v. Infrastructure and related

- The delayed four-laning project on the roads traversing through industrial corridors (like, Pinjore-Nalagarh section of National Highway (NH) 21) may be brought back on stream, by negotiating with neighbouring states on costs of land acquisition, and related issues.




- The exorbitant transportation cost charged by the truckers is one of the biggest challenge for industries. The Truckers' association in the district is said to be very powerful and to break its monopoly, the development of proper rail connectivity is necessary. Rail connectivity will also facilitate easy and cheap transportation, especially of freight.

vi. State policies and regulations

- Many improvements can be considered in the government's Industrial Development Scheme, 2017, so that the intended benefits are more widely spread. Some of these include provision of incentives on installing refurbished Plant and Machinery (P&M); removal of mandate of obtaining an appraisal of a scheduled bank before sanction of an assistance; recognition of some essential components like drug testing laboratories, air conditioning systems and specified packaging machines as P&M.

- On Ease of Doing Business reforms, the State may like to address the implementation gaps in establishing the online single-window; conducting land and construction permit reforms, establishing electronic commercial courts, etc.

- Obtaining the Essentiality Certificate may be made simpler to the extent possible within the existing legal framework. This is a major bottleneck for investors who wish to set up a unit in the district.

4. Action Plan and Progress Yardstick

Table (E.1) presents the proposed plan of actions in the identified domains, and the indicators to measure progress.

Table (E.1): Short Term Action Plan and Indicators of Progress

Area	Action Plan	Progress Yardstick	Department	Convergence with existing scheme
Industry and Related	Expedite the implementation of Cluster development programme for pharma sector (CDP-PS) and Pharmaceutical promotion develop Short term scheme (PPDS)	The provision of financial assistance in various phases for creation of identified infrastructure	Ministry of Commerce and Industry; District Industry Centre	CDP-PS, PPDS
	Incentive on installing refurbished or reconditioned Plant & Machinery (P&M), even if imported from other countries	Benefits, especially to the drug manufacturers	Ministry of Commerce and Industry; District Industry Centre	Industrial Development Scheme for HP and Uttarakhand, 2017
	For the pharma industries, the essential components like testing laboratories to conduct tests may also be considered as P&M	Benefits to the drug manufacturers	Ministry of Commerce and Industry; District Industry Centre	Industrial Development Scheme for HP and Uttarakhand, 2017
	Explore production of high-value essential oil or aromatic oil using exotic herbs	Benefits to manufacturers and exporters	District Industry Centre	-

	Legalise the cultivation of cannabis for industrial use	Benefits to manufacturers and exporters	HP Government	-
Horticulture	Popularize the benefits of protected cultivation	More crops, particularly exotic varieties and flowers, brought under protected cultivation	Horticulture Department	National Horticulture Mission; State Mission on Food Processing
	Increase state budget allotted for subsidies towards development of poly-houses	More people getting benefit of subsidy	State government	National Horticulture Mission for North East & Himalayan States (HMNEH)
	Post-harvest management, cold storage and suitable air-conditioned transportation systems / vehicles to be arranged	Increase in production and benefits to producers in transporting perishable horticulture and floriculture items	Horticulture Development Office	Weather based crop insurance scheme (WBCIS)
	Agencies like HPMC to procure and market agricultural produce	Better market realisation for producers	Agriculture Department	National Horticulture Mission
Tourism	Obtaining clearances for setting up a hotel from various departments to be centralized, say, DC Office	Setting up of hotel establishment made simpler.	Tourism Department	EoDB Reform
Skills Development and Human Resources Development	The engineering and medical institutes to accept the nationally conducted JEE and NEET exams for their admission process	More popularity of professional institutes at national level	State Education Department	-
	The research support to Research Institutions, Colleges with Life Science Faculty and NGOs of the district may be availed from the Department of Biotechnology	Benefits to Scientists, Teachers, Students, SC/STs and Women.	Department of Biotechnology	Competitive Research and Development Grant Scheme, Star College Scheme and Societal Program
Ease of Doing Business	State should address the implementation gaps in establishing the online single-window; conducting land and construction permit reforms, establishing electronic commercial courts, etc.	Doing Business made easier. Increase in number of investors	District Industry Centre	EoDB Reforms
	Obtaining the Essentiality Certificate may be made simpler	Doing Business made easier. Increase in number of investors	Panchayat Samiti, District Industry Centre	EoDB Reforms

5. Next Steps

The following steps are recommended for the Second Phase (9 months):

a) Agreement on the identified sectors and activities for detailing and development
b) Preparation of Action Plan in consultation with DIPP, GoHP and District Administration
c) Setting up a Nodal coordinating unit in the DC or CEO ZP office, and assigning personnel with powers to implement plans
d) Outreach to Private Sector and Investors in the district and the state – organization of a workshop in the style of investor meets after due preparations
e) Selection of Indicators for tracking progress
f) Other action items as emergent.

6. Report Outline

After introduction to the scope of the study in Chapter 1, Chapter 2 presents a brief overview of Solan district in terms of its geographical and social profile. The economic and infrastructural profile of the district, covering analysis of District Gross Domestic Product, employment, infrastructure and household amenities etc., are presented in Chapter 3. Chapter 4 identifies the key promising economic activities, and assesses the challenges and opportunities. Human resources and institutional capacity are outlined in Chapter 5. Chapter 6 presents the recommendations for Phase 2.




I. INTRODUCTION

I.1. *Context of the study*

The Department of Industrial Policy and Promotion (DIPP) constituted a "*$5-Trillion-Economy Working Group",* which held its first meeting on 15th March, 2018. This Working group has set an agenda to prepare a strategy to make India a $ 5 Trillion economy by 2025. One of the key highlights that has emerged from the first meeting of the Working Group is that for a sustained high growth, a bottom-up approach with districts as planning units is the need of the hour. With so many innovations in IT, we are at a unique stage of development where decentralized and more participatory planning, which has been articulated over a long period of time, can be effectively implemented. For better outcomes, plans that are relevant to local areas will be successful if these are owned and led by district and local governments, with the support of local entrepreneurs, farmers, traders, and citizens.

This approach would involve the districts more actively in the future growth of the Indian economy, allowing policymakers at all levels to formulate a development vision starting from the district-level. Keeping the above in view, there is a need to undertake action-oriented policy research at the district level to enable districts to achieve an additional 2-3 per cent growth.

The DIPP has commissioned the National Council of Applied Economic Research (NCAER) to carry out the exercise for Ratnagiri and Sindhudurg districts (Maharashtra) and Solan (HP). It has been further decided by DIPP that:

- The work will be completed within a period of one year and carried out in two phases.
- Phase I, to be completed within three months from the date of agreement, shall involve preparation of the Plan in consultation with the District Administration and relevant stakeholders.
- Phase 2 of the work, over 9 months, shall involve mentoring and hand-holding the District Administration in implementation and capacity building and skilling initiatives

This document presents the outcome of the Phase 1, "District Strategic Plan" for ***Solan*** district.

I.2. *Objectives*

The overall aim of the study is to develop District Strategic Plan for accelerating growth by about 2-3 per cent. The objectives of the Phase I of the study are:

- To prepare a Baseline profile of the District.
- In consultations with the district administration and various stakeholders:
    - To identify parameters/metrics that are relevant for the strategy prepared, and that will also enable tracking of progress in consultation with

- To identify investments, resources, strengths of the district including skills available.
- To suggest interventions for key economic sectors; for skilling; and for improving business environment.

I.3. *Methodology*

The first phase of the exercise used a mix of secondary data analyses and primary interactions with State and district stakeholders for identifying the key areas for developing the draft Strategic Plan.

Secondary Data Analysis: This report is based on secondary data collected from official data-sources such as the Census of India, Directorate of Economics and Statistics (GoHP), Brief Industrial Profile of Solan district (Ministry of MSME, Govt. of India), National Sample Survey (NSS), and data from the periodic Economic Census, Agriculture Census, specialised govt and trade bodies, etc. Data, research papers and media reports from different govt. and private websites have also been used for analysis.

Stakeholder Meetings: The NCAER Team carried out field visits, and held meetings and consultations with stakeholders in the State (Shimla, especially the Economic and Statistics Dept and Industries) and in the district. District interactions included the Collector and other key officers in the district administration (Additional District Magistrate and departments of agriculture and horticulture, industries, tourism, Skill training institutes, etc.), selected industries representatives and association members in BBN industrial area.

I.4. *Limitations*

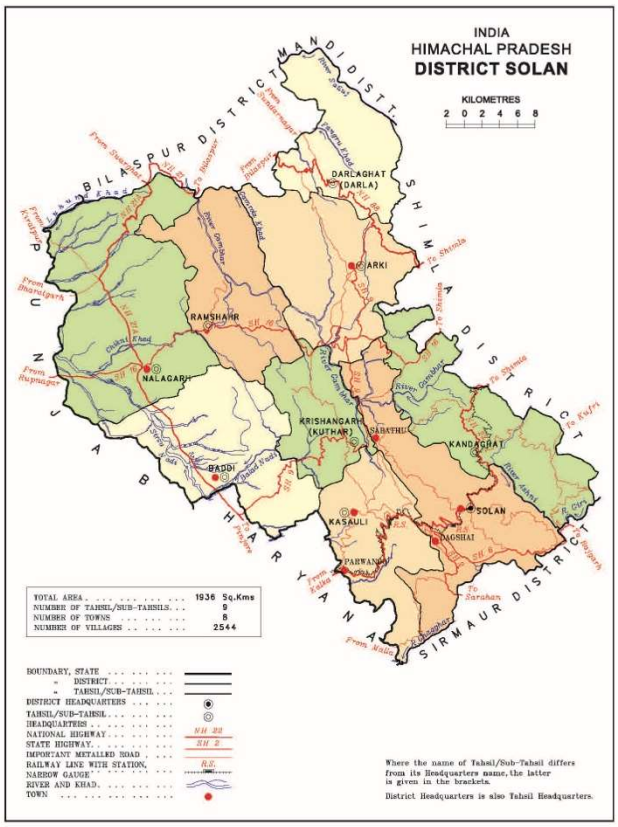
The limited three-months' time-frame permitted only an initial identification of strategic thrust areas, and in particular, the following limitations may be noted:

- Lack of reliable district level economic data: Although socio-economic and demographic profiles of the district were obtained from official data sources which are available on public domain, like Census, District Statistical Abstract etc. but some of the sources could not be efficiently used for district level analysis due to small district representation like NSS survey data. Also GDDP data for Solan district is available only at current price, making it difficult to assess the real growth.

- Selective interactions with Stakeholders: The data and analysed information on trends in different sectors have been discussed with a wide range govt. stakeholder agencies and departments, as well as with private sector agencies. Despite many in number, these interactions have been selective and may not be fully representative of the large variety and number of economic agents active in the district. Therefore, some of the claims and issues reported may be subject to revisions during the detailing of strategies and action plans in Phase 2.

II. SOLAN DISTRICT OVERVIEW

II.1 Background



Solan, created on 1st September, 1972, is one of the twelve districts in Himachal Pradesh. It is the largest Municipal Council of Himachal Pradesh. The district is popularly known as the "Mushroom city of India" owing to the vast mushroom farming in the area and to the presence of Directorate of Mushroom Research (DMR) at Chambaghat. It is also known as the "City of Red Gold", due to bulk production of tomatoes.

The district is divided into four sub-divisions, namely Solan, Nalagarh, Arki and Kandaghat. There are a total of 12 tehsils/sub-tehsils and 5 Development Blocks. Solan sub-division comprises Solan and Kasauli tehsils. Nalagarh, Arki and Kandaghat sub-divisions comprise Nalagarh, Arki and Kandaghat tehsils respectively. There are a total of 211 panchayat-villages and 2383 inhabited villages in Solan district.

II.2 Geographic profile

The total geographical area of Solan district is about 1,936 sq km., constituting about 3.5 per cent of Himachal Pradesh's total geographical area and ranking 9th amongst the districts. The elevation of the district ranges from 300 to 3,000 metres above sea level. The climate is neither too hot nor too cold in Solan district, however during winter, Solan experiences little snowfall.

The district is surrounded by Shimla district in the North, Sirmaur district in the east, Bilaspur in the west and Mandi in the north-east. In its south, it touches the boundaries of Ropar district of Punjab and Ambala district of Haryana.

II.3 Physiography

Located in the middle of National Highway 22 linking Kalka and Shimla, Solan district is characterized by it regional and natural divisions in reference to its terrain and its

administrative division. The district forms the western part of southern Himachal Pradesh division of Himachal Pradesh Himalaya sub-region of the Northern Mountain region, which is one of the four micro regions of the state.

Four sub-micro regions of the district are Satluj Basin, Solan Lesser Himalaya, Nalagarh Shiwalik and Solan Forests.

Satluj Basin: Extending over the extreme north-eastern part of the district, the region makes its boundaries with Mandi district in the north, Bilaspur district in the west, Solan lesser Himalaya in the south and Shimla district in the east.

Solan Lesser Himalaya: Spreading over the central part of the district, the region is surrounded by Satluj Basin from north, by Shimla district from east, by Solan Forest region from south and by Bilaspur district and Nalagarh Shiwalik from west.

Nalagarh Shivalik: Covering western part of the district, it is bounded by Bilaspur district in the north, state of Punjab in the west state of Haryana in the south and Solan Lesser Himalaya and Solan Forest in the east.

Solan Forests: Extending towards the southern and south eastern parts of the district, the region is surrounded by Shimla district in the north east, Siraur district in the south-east, Haryana state in the south-west, Nalagarh Shivalik in the noth west and Solan lesser Himalaya in the north.

Climate & Rainfall

There are three valleys in the district, viz. Kunihar in Arki, Saproon in Solan and Doon in Nalagarh Tahsil. However, the terrain of the district on the whole is mountainous except the three valleys. Climate of the district in valleys is sub-tropical and temperate in the hilltops. The winter season commences from November to February and ends in March; summer season extends from March to June, followed by the monsoon period extending from July to September. During July to September, maximum precipitation occurs. Average annual rainfall in the district is about 1140.86 mm, out of which 85% rainfall occurs during June to September. In the winter season, precipitation as snowfall also occurs in the higher reaches up to 1000 m elevation and as rainfall in low hills and valleys of the district. Mean maximum and minimum temperature ranges between 32.2°C (May) and 0.6°C (January).

Soil

Soli of the district is sandy loam in valley and skeletal in hilly and mountainous area. Except in areas having good vegetative cover, soil depth is generally shallow and dry and deficient in organic matter. Although landslides are the common features in mountainous terrain, soil is rich in nutrients and therefore fertile. Forests of Scrub types are grown on the lower slopes and chir, deodar, oak and kail on the higher slopes of the district. The soil in the district varies from light to sandy heavy and in the valley areas it is sandy to sandy loam. The district has different type of soils which offer great potentialities for growing various types of cereals, fruits, vegetables and other cash crops.

Forest

Characterized by many hill ranges, the Solan forest stretches from north-west to south-east direction. Solan Forests contains Ochrepts-Orthents type of soils. This region has scrub forests on lower elevations and Chir, Deodar, Oak and Kail at higher elevations. In scrub forests, the proportion of Bamboo, Khair and a few other economically important broad leaved spicies are relatively low. Among the coniferous spicies, Chir is the most predominant. Forest also plays an important role in the economy of the district. Forest occupies an area of 20, 289 hectares out of the total geographical area of 1,80,923 hectares. Major forest produce that comes from forests are in the form of timber, firewood, katha, resin, fodder, herbs etc.

Agriculture

Solan is a hub of horticulture produce marketing. Tomatoes, plums, apricots, kiwi, apples and seasonal vegetables constitutes major economic activity of the town. There is big complex on Saproon bypass housing vegetables and fruits market. Solan is also famous for the production of off-season vegetables. Also known as “Mushroom city of India”, the district stands out in the mushroom production and productivity, which have almost doubled and registered a six fold increase respectively since the establishment of Directorate of Mushroom Research. The ongoing research includes working on collection, identification, conservation and genetic characterization of mushroom germplasm, development of high yielding varieties, improvements in the production technologies of different edible mushrooms, technology developed for newer specialty mushrooms, integrated pest and disease management, post harvest technologies for various mushrooms and imparting trainings to the trainers, entrepreneurs, growers, unemployed youths, women growers etc. in the district.

Natural Resources

The important minerals available in Solan are Lime Stone and Building Stone. Besides, some quantity of sand is also available in the district with its use for construction activity. Forest occupies an area of 20,289 hectares out of the total geographical area in Solan district. Major forest produce that comes from forests is Timber, Firewood, Katha, Resin, Fodder, Herbs etc. The main species of trees available in the Solan district are Khair and Chil.

II.4 Administrative Setup

For Administrative purpose, the district has been divided into 6 tehsils, namely Solan, Kandaghat, Kasauli, Nalagarh, Arki, Baddi and three sub-tehsil namely Krishangarh, Darlaghat & Ramshahar. There are five blocks in the district namely Solan, Kandaghat, Dharmpur, Nalagarh and Kunihar. There are 211 panchayats in the district covering 2383 villages[1].

[1] *Brief Industrial Profile of Solan District, 2016-17, MSME Development Institute*

During the decade of 2001- Census 2011 the number of tahsil/sub-tahsil was increased from 7 to 9 with the creation of Darlaghat sub-tahsil and Baddi tahsil. 191 villages from Arki tahsil were transferred to Darlaghat sub-tahsil, whereas 126 villages from Nalagarh and 67 villages from Krishangarh were transferred to Baddi tahsil. Four villages each were newly created in the tahsils of Arki and Darlaghat resulting the increase in total number of villages in the district from 2,536 in Census 2001 to 2,544 in 2011. In urban areas only Baddi promoted from Nagar Panchayat to Municipal Council with merging of 5 out growth villages and remaining towns have no change in civic status[2].

Departments

The district has departments like Baddi Baroliwala Nalagarh Development Authority (BBNDA) and State Council of Education Research and Training (SCERT) for better planning of the district.

The BBNDA has very vast Planning area consisting of 41 Nos. of Panchayats having 229 Revenue Villages measuring 31814 Hectares including 5000 Industrial Units, 4 Growth Centers i.e. Baddi, Barotiwala, Nalagarh & Panjhera and 2 Urban Local Bodies. The BBN area is the biggest Special Planning area in the Himachal Pradesh.

SCERT aims to improve the quality of education in the district through various interventions like imparting in-service training to teachers, conducting studies on issues relating to quality education, organise workshops and seminars on various issues, etc.

II.5 Demographic and social profile

The population of Solan district as per census, 2011 is 5.77 lakh persons which is about 8.5 per cent of the total population of Himachal Pradesh. The district's population density is 298 persons per square kilometre, close to state density of 300 persons per sq km. The sex ratio is 880 men per 1000 women. The average literacy rate in the district is 83.7 per cent (2011 Census). The literacy rate of men is 89.6 percent and that of women is lower at 77 percent. Work force participation rate in the district is 51.5 per cent.

Solan district comprises mainly of rural areas, which are inhabited by 82.4 per cent of the total population. There are no urban agglomerations in the district.

II.6 Industry

With regard to the MSMEs, Solan is the most developed district in the state. There are a total of 15 industrial areas in the district (as on Aug, 2015)[3], where about 5700 micro, small and medium enterprises have been set up. These enterprises employ over 1.5 lakh persons.

[2] *District Census Handbook Solan, Directorate of Census Operations, Himachal Pradesh.*
[3] *Brief Industrial Profile of Solan District, 2016-17, MSME Development Institute*

The district has recognised following clusters:

- General Light Engineering Cluster (Parwanoo),
- Corrugated Boxes Cluster (Baddi)
- Drug and Pharma Cluster (Baddi)

Maximum no. of units registered with the Himachal Pradesh Industries Department, Government of Himachal Pradesh are in Mechanical, Chemicals, Pharmaceuticals Electrical & Electronics etc., which are also the largest employment generator in the district. After the implementation of Special Industrial Package of incentives, many large & medium scale industries have come up in the district. As on Aug 2015, a total number of 107 large and 241 medium scale units have been functioning in the district.

II.7 Services

Tourism is the main activity, within the service sector. Solan is also developing as education hub of Himachal Pradesh with many established technical institutions giving employment to people of the town. Other service industry of Solan district includes entertainment services, cable/ DTH services, printing, binding & lamination, welding works, photocopy services, motor binding, computer repairing , cycle/motor cycle repairing, skin and hair care, book binding, shoe repairing, repair & servicing of electrical appliances, repair & servicing of refrigerators/electronics goods, repairs of agricultural implements etc. There are however, no identified clusters of service sector in the district.

II.8 Tourism

Chail is a popular hill station with Deodar and Oak forests and grasslands. Chail sanctuary, a popular tourist destination, is spread in an area of more than 110 sq. kms, at the foothills of mighty Himalayas. In 1976, Chail wildlife sanctuary was identified and was declared as a protected area. Apart from its animals and birds, the main attraction of the sanctuary is the Chir Pheasant breeding farm.

Other popular tourist destinations are pine forest surrounded Barog; Kasauli with colonial ambience; Manjathal sanctuary with maximum population of endangered Cheer pheasant; centuries-old Kuthar fort, Arki fort, Nalagarh palace; Horticulture and Forestry University at Nauni; lavish orchards of Rajgarh etc.

II.9 Fair and festivals

Among the famous fests and fairs are Shoolini fair and Sair festival. Every year in the month of June, Shoolini fair is held, featuring a 3-day mela at Thodo ground. The traders, sweet-sellers, general merchants and other shopkeepers gather here in large numbers. The Shoolini fair is known for delighting people with dancing, singing and wrestling by the local talent.

Sair is organised in mid-September and celebrated in the different parts of the state. The Sair Festival at Arki in District Solan is the major tourist attraction.




III. ECONOMIC AND INFRASTRUTURAL PROFILE

III.1. Gross Domestic Product

The data on Gross District Domestic Product (GDDP) for Solan district was made available from the Directorate of Economics and Statistics, Shimla. The data are available by broad economic sectors and for the years 2011-12 to 2015-16 (with base year 2011-12)[4].

Among the 12 districts of the state, Solan is ranked at the first position with respect to its per-capita income (Figure 1) and also with respect to its contribution to state GDP (Figure 2). At Rs. 3,94,102, Solan's per-capita income is 1.8 times the second ranked Kinnaur at Rs. 2,17,993.

Solan's share in GDP has consistently been around 25 percent. Next highest shares are of Shimla (around 14 percent) and Kangra (around 13 percent).

Figure III. 1: District-wise per-capita income - 2015-16

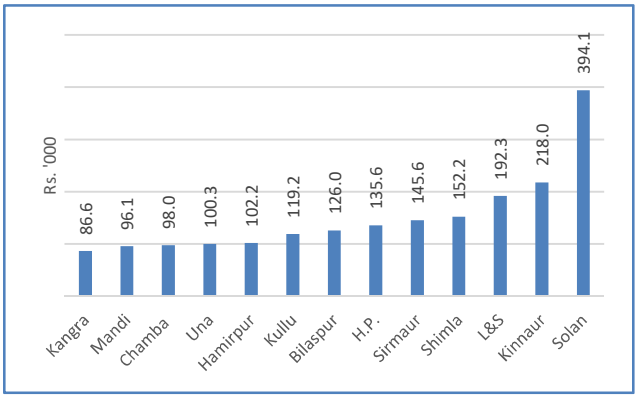
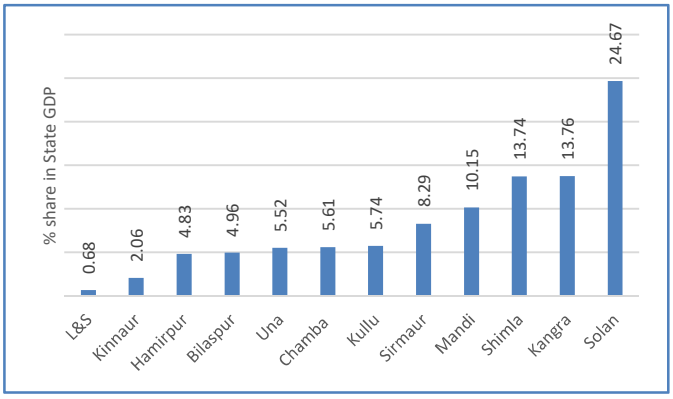


***Figure III.2:* District share in State GDP (%)**



Source: Directorate of Economics and Statistics, Shimla

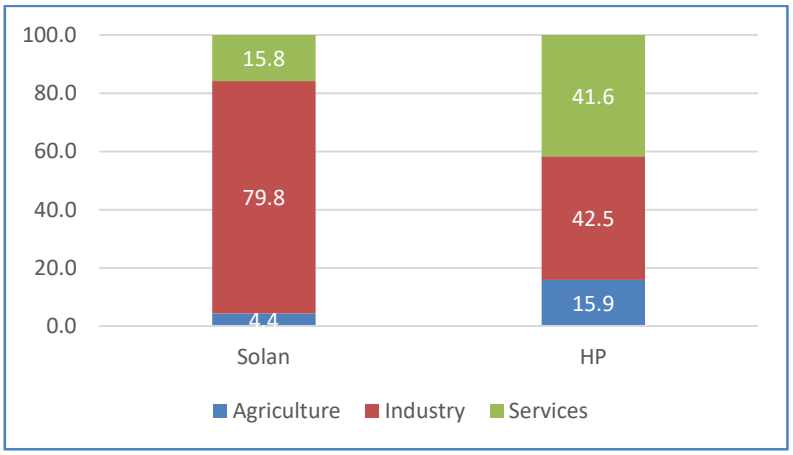
Sectoral share in GVA

The sectoral breakup reveals that the district is largely driven by its industrial activity. Almost 80 percent of the district economy is on account of industry, comprising mining; manufacturing; electricity, gas & water supply; and construction. Agriculture accounts for less than 5 percent to the district GDP and services contributes about 15 percent.

Among the constituents of industry, the biggest contributor is manufacturing activity with its share of about 75 percent to total economy. As compared to this, the share of industry to economy for Himachal Pradesh, as a whole, is just about 40 percent (Figure 1). Notably, Solan contributes almost half to the state industrial GDDP.

[4] We could not get any data on Solan GDDP prior to 2011-12.

Figure III.3: Sectoral share in GDP (average FY 12 to FY16)



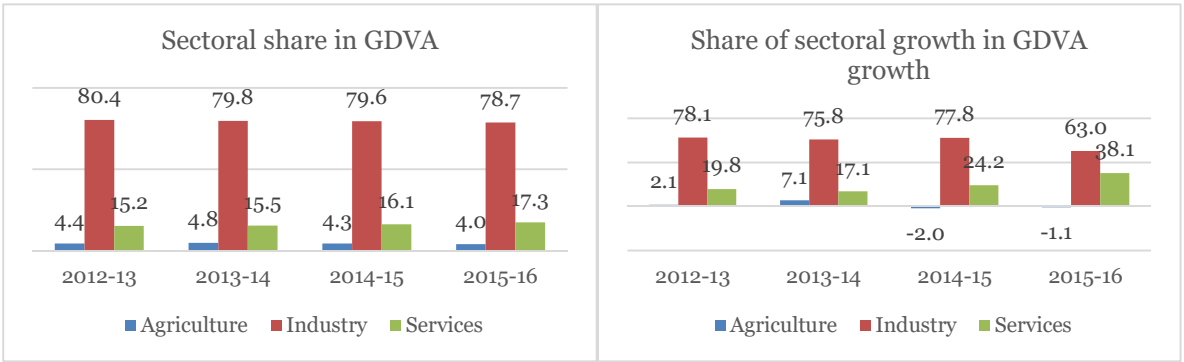
Source: Directorate of Economics and Statistics, Shimla

The extent of industrialisation in the district owes largely to the tax holiday which the district enjoyed during 2003 to 2013. In 2003, government sanctioned a massive tax incentive package to the manufacturers of Himachal Pradesh, which included of income tax and 10 years of central excise tax. These sops gave a major push, particularly to Solan, with the development of many new industrial areas.

Sectoral share in growth of GVA

Besides the share of broad economic sectors in overall GVA, we have also derived the share of sectoral growth in overall growth to identify the sectors which spur growth. The analysis reveals that while industry is the biggest contributor in both GVA and in the growth of GVA but its share in GVA growth is declining, while that of services sector is picking up fast. Thus, services sector, despite its almost constant share in GVA, is growing faster than other sectors, hence, giving a significant push to overall growth.

Figure III.4: Sectors' share in GVA and GVA growth



Source: Directorate of Economics and Statistics, Shimla; and NCAER computation

In 2015-16, as the aftermath of withdrawal of tax incentives to industry sector, the share of industry in GVA continued to be around 80 percent, but its slower growth led to its lower share in GVA growth, at 63.0 percent, from 77.8 percent in previous year. On the other hand,

share of services in overall growth increased from 24.2 percent in 2014-15 to 38.1 percent in 2015-16.

The share of agriculture stayed insignificant at around 4 percent and its share in growth hit sub-zero level in 2014-15 and 2015-16, exerting a downward push to overall growth.

The following matrix of four quadrants presents the list of sectors in each quadrant on the basis of their contribution in GVA as well as in GVA growth:

Figure III.5: List of sectors according to their share in GVA and in GVA growth

Share in growth higher than share in GVA Electricity, gas & other utility services Trade & .Repair Services Hotel & Restaurant (for 2014-15 and 2015-16) Road Transport Real Estate, ownership of dwellings & professional services Public Administration.	**High Share in growth and high share in GVA** Manufacturing (exception - share in growth fell from 76% to 59%)
Low Share in growth and low share in GVA Fishing Mining	**Share in growth lower than share in GVA** Crops (negative share in growth) Livestock (share in growth is more than share in GVA only in 2015-16) Forestry & Logging Hotel & Restaurant (for 2012-13 and 2013-14) Construction

III.2. Employment

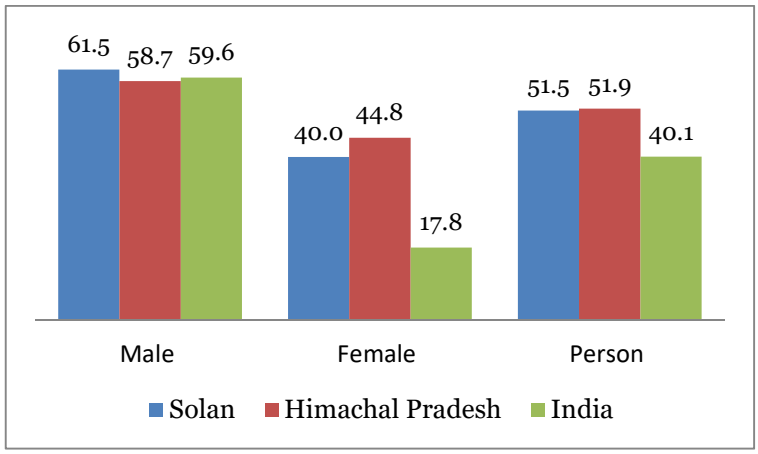
To assess the employment situation in Solan district, we have analysed both Census, 2011 data and NSS (National Sample Survey) data on Employment Unemployment. Latest NSS data is also available for 2011-12 but the advantage of using NSS data is that these provide employment details by disaggregated industry codes. Also, these data give insights on the educated and skilled workforce.

Workforce Participation Rate

According to the Census 2011, the work participation rate of the district or the number of persons in active workforce as percent to total population, is 51.5 percent, only a tad lower than the state average of 51.9 percent but way higher than the national average of 40.1 percent.

As many as 40.0 percent of the women are in active workforce of the district. This is impressively higher than the national average of just 17.8 percent while the state average is even higher at 44.8 percent. Male participation rate is also higher than national average and also state average.

Figure III.6: Workforce Participation Rate (%)



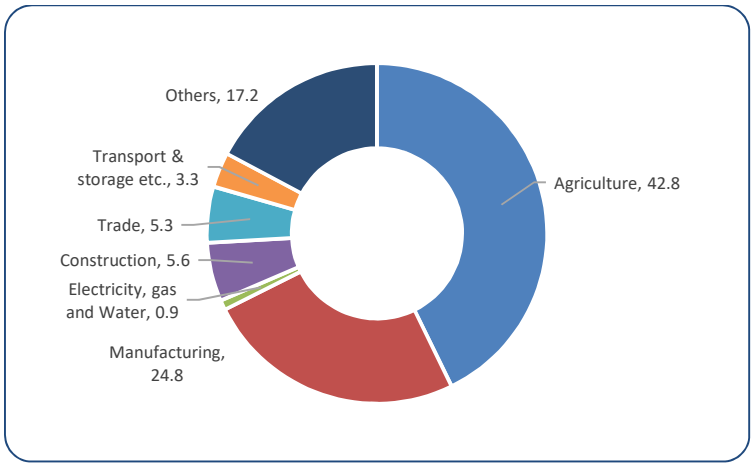
Source: Census, 2011

Sectoral breakup

As mentioned before, for the sectoral break-up of employment, we have worked on the unit level NSS data on Employment-Unemployment.

This data reveals that while agriculture is the biggest employer, as in most parts of the country, but manufacturing sector is also a key employment generating sector. About a quarter of workforce is employed in manufacturing activities. Industry sector, comprising of manufacturing, construction and electricity, accounts for 31.4 percent of the workforce.

Figure III.7: Distribution of workers by broad sectors



Source: NSS, 2011-12

Other key findings of NSS data, with respect to labour-force participation rate, educated employment, skilled employment, unemployment rates and dependency ratios are the following:

- The labour-force participation rate of Solan is 56.0 percent. Of these, 54.3 percent are in the active workforce and the remaining are unemployed or

available/willing to work. The overall LFPR of Himachal Pradesh is 49.6 percent.

- Of the total employed persons, 40.2 percent are either not educated or educated till primary level. Rest are educated beyond primary education.
- About 15.2 percent of the employed persons are skilled or have acquired any kind of vocational training – formally or informally.
- More than half, that is 53.1% of the employed persons belong to the young age group of 15 to 35 years.
- Another 42 percent belong to age-group of 36 to 59 years.
- The unemployment rate of the district, as per NSS estimates, is 3.0 percent, which is higher than 2.0 percent for the state, as a whole. Unemployment rate refers to the potentially employable population and is the proportion of persons in the labourforce, who are not employed but are willing to work, if work is made available to them.
- With the LFPR of 56 percent, there is lesser burden of "not working" persons on "working" persons. The dependency ratio, that is, number of persons not working to those working is 0.84. This ratio for the state is higher at 1.06.
- Taking the ratio of unemployable persons (children and old) to employable persons (all persons belonging to employable age-group of 15 to 59 years), the dependency ratio works out to be 0.45.

A further analysis on sectoral employment reveals the following:

Table III. 1: Employment break-up within broad sectors

		% share
Agriculture	Cereals other than wheat	65.6
	Cucumbers, gherkins, aubergines, tomatoes, watermelons, cantaloupes , melons and other fruit-bearing vegetables	15.9
	Wheat	11.0
	Other	7.5
	Total	100.0
Manufacturing	Food Products	2.4
	Pharmaceutical preparation	19.4
	Electrical Equipment	21.3
	Parts and accessories of motor vehicles	10.2
	Others	46.7
	Total	100.0
Other Industry	Construction	85.8
	Electricity, Gas & Water supply	14.2
	Total	100.0
Services	Trade	12.8
	Private Security activities	11.7
	Public Administration and defence	14.3
	Education	19.2
	Others	42.1
	Total	100.0

Source: NSS, 2011-12

III.3. Infrastructure

The socio-economic growth of any region is greatly dependent on the infrastructural facilities, both physical and soft infrastructure. In the following sections, the status of social as well as physical infrastructure in the district are presented. These are based on the Census, 2011 data. It is believed that most of these infrastructural indicators would have improved over time.

Social Infrastructure

The access to social infrastructure (like educational and medical facilities, financial institutions, and electricity connections) is presented below in terms of number per lakh population as well as number per village for rural areas and number per town for urban areas.

Table III.2: Social Infrastructure in Solan and Himachal Pradesh

	Solan			Himachal Pradesh		
	Rural	**Urban**	**Total**	**Rural**	**Urban**	**Total**
Education Facilities (per lakh population)						
Primary schools	2773	69.5	240.7	256.2	88.4	239.4
Other schools	151.6	105.7	246.9	170.6	138.3	245.1
Colleges/Professional Institutes	4.0	16.6	6.2	4.1	19.5	5.7
Vocational Training Institutes	-	27.4		-	39.1	
Education Facilities (per village/town)						
Primary schools	0.5	8.9	0.5	0.8	10.3	0.8
Other schools	0.3	13.5	0.6	0.5	16.1	0.8
Colleges/Professional Institutes	0.0	2.1	0.0	0.0	2.3	0.0
Vocational Training Institutes	-	3.5		-	4.6	
Medical Facilities (per lakh population)						
Hospitals/Dispensary/Family welfare	61.7	32.3	56.5	152.7	46.5	142.0
Number of Beds	-	515.9		-	1043.5	
Number of doctors	74.5	109.6	80.6	81.3	186.5	91.8
Medical Facilities (per village/town)						
Hospitals/Dispensary/Family welfare	0.1	4.1	0.1	0.5	5.4	0.5
Number of Beds	-	65.9		-	121.8	
Number of doctors	0.1	14.0	0.2	0.2	21.8	0.3
Financial Institutions						
Financial Institutions (per lakh population)	-	84.2		-	116.6	
Financial Institutions (per village/town)	-	10.8		-	13.6	
Number of towns with Fire fighting service	-	5.0		-	22.0	
Electricity - Domestic connection (per 100	-	105.6		-	149.1	

"-" not available for rural areas

Source: Census, 2011

Physical Infrastructure

Air Connectivity

There are 3 airports in HP. These, along with their distances from Solan district, are as follows:

- Bhuntar in Kullu – 238 km from Solan
- Jubbarhatti in Shimla – 61 km from Solan
- Gaggal in Dharamshala – 271 km from Solan

And one airport in Chandigarh – 77 km from Solan

Road Connectivity

According to the Statistical Abstract of HP, 2016-17, among all the districts in HP, Solan stands second with respect to growth in road length between 2013-14 and 2016-17. From 1628 km in 2013-14, length of metalled road increased to 2004 km in 2016-17, registering a growth of 23 percent. The comparative picture of increase in road length in Solan and other districts is presented in Figure xxx. The time series of road length in Solan shows an upward trend.

Figure III.8: Road length in Solan over years

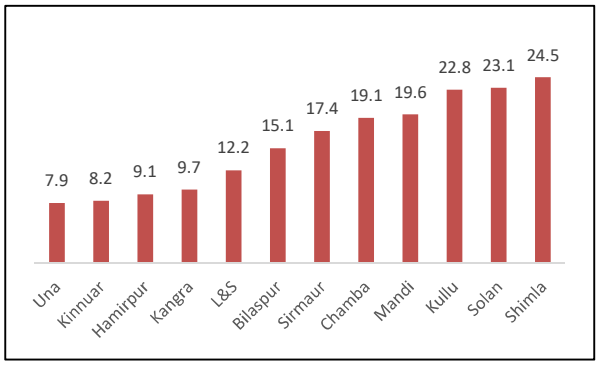
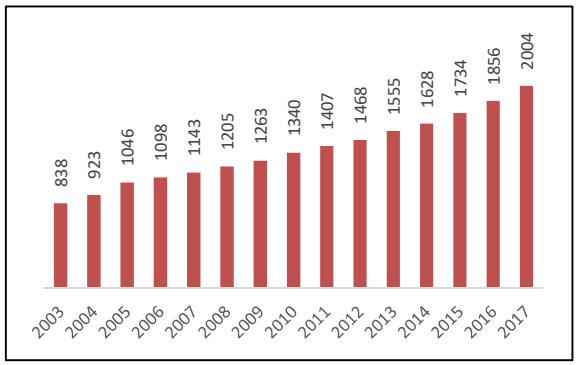


Figure III.9: Growth in Districts' Road length between 2013-14 and 2016-17



Source: Statistical Abstract of HP, 2016-17

Household Amenities

Most of the households (84.3 percent) in the district use tap-water for drinking purposes. This is true for all the districts in HP, which translates into state average of 89.5 percent.

This proportion is over 90 percent in urban areas of all the districts.

Table III.3: Percent distribution of households by main source of drinking water

Main Source of Drinking Water	Solan			Himachal Pradesh			India		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Tapwater	81.51	94.60	84.28	88.73	95.52	89.49	30.81	70.63	43.54
Well	4.37	1.39	3.74	3.12	0.98	2.88	13.31	6.15	11.02
Handpump	2.84	0.76	2.40	3.88	1.34	3.60	43.63	11.86	33.48
Other Sources	11.29	3.24	9.58	4.27	2.16	4.03	12.25	11.36	11.97
Total Number of Households	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Census, 2011

60 percent of the rural households in Solan district use firewood as source of fuel for cooking purpose.

This proportion is notably low among urban households, where LPG/PNG is the main source of fuel for 82.8 percent of the households.

Table III.4: Percent distribution of households by type of fuel used for cooking

Type of Fuel used for Cooking	Solan			Himachal Pradesh			India		
	Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Fire-wood	59.5	3.4	47.6	64.0	6.8	57.5	62.6	20.1	49.0
LPG/PNG	33.0	82.8	43.6	32.7	85.1	38.6	11.4	65.0	28.5
Others	7.5	13.8	8.8	3.3	8.1	3.9	26.0	14.8	22.5
Total number of Household	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Census, 2011

In Table II.5, number of villages electrified under Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) in different blocks of the district is shown. Nalagarh has highest number of villages electrified. However, in percentage terms, Kandaghat has highest proportion of villages electrified under DDUGJY.

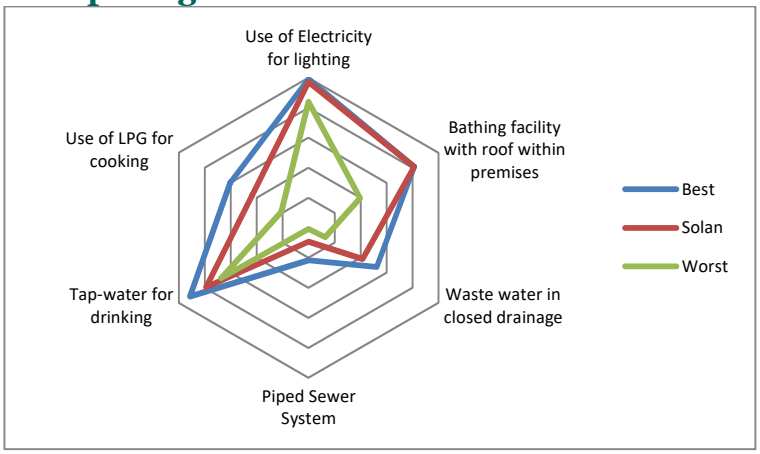
Table III.5: Number of villages electrified in Solan district under Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) (as on December 2018)

Source: Official Website of DDUGJY (http://www.ddugjy.gov.in/portal/dcompleted_11p2.jsp?stcd=27 accessed 12/11/2018

Blocks	Villages Covered	Villages Completed
Dharampur	536	245
Kandaghat	264	159
Kunihar	476	181
Nalagarh	599	296
Solan	405	235
Total	2280	1116

The following figure compares the values of these indicators (in terms of households as percent to total) with the best (with maximum value) and worst (with minimum value) district of the state.

Figure III.10: Comparing Solan with Best and worst districts



Source: Census, 2011

With respect to most of the indicators on housing amenities, Solan fairs well as compared to other districts and is closer to the best district of the state.

III.4. Ownership of assets

An analysis of use of banking services and ownership of assets for households in Solan shows that:

- Television, across rural and urban parts of the district, is the most owned asset.
- This is followed by mobile phones.
- On an average, 5.4 percent of the households do not own any asset, as compared with national average of 17.8 percent.

Table III.6: Percent households availing banking services and owning types of assets

Availability of Assets		Solan			Himachal Pradesh			India		
		Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
Availing banking services		84.0	86.3	84.5	89.1	89.2	89.1	54.4	67.8	58.7
Ownership of assets										
Radio/Transistor		32.8	26.0	31.3	25.3	28.6	25.7	17.3	25.3	19.9
Television		77.2	75.3	76.8	73.2	84.2	74.4	33.4	76.7	47.2
Computer/ Laptop	With Internet	2.7	9.9	4.3	1.8	10.9	2.8	0.7	8.3	3.1
	Without Internet	5.8	13.6	7.5	4.4	14.4	5.6	4.4	10.4	6.3
Telephone /Mobile Phone	Landline only	9.4	3.9	8.2	7.7	5.4	7.4	3.1	5.9	4.0
	Mobile Only	59.7	70.7	62.0	60.9	65.7	61.5	47.9	64.3	53.2
	Both	18.1	16.8	17.9	12.4	21.4	13.4	3.3	11.7	6.0
Bicycle		10.6	8.1	10.1	9.3	10.6	9.5	46.2	41.9	44.8
Scooter/Motorcycle/Moped		19.7	23.3	20.5	14.4	24.1	15.5	14.3	35.2	21.0
Car/Jeep/Van		10.5	18.9	12.3	6.7	21.2	8.3	2.3	9.7	4.7
households with TV, Computer/Telephone, Mobile phone and Scooter and Car		4.3	14.3	6.4	2.7	15.2	4.1	1.0	12.2	4.6
None of Assets		5.5	5.0	5.4	9.6	3.1	8.9	22.9	7.0	17.8
Total number of households		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Census, 2011




IV. SECTORAL PERFORMANCE AND CHALLENGES

This chapter discusses the three broad economic sectors of the district – Agriculture, Industry and Services – in different sections. Within each section, its broad overview is presented, followed by a description of the identified potential areas or activities within each sector. These are identified on the basis of secondary data research and consultation sessions with the district stakeholders and are perceived to be capable of giving a boost to the overall district economic growth. Also presented are each the Strengths, Weaknesses, Opportunities and Threats of each potential area, followed by our tentative Recommendations.

Among the three broad sectors, as seen in the sectoral GDP data in Section II.2, "Industry" is the biggest contributor to both GDP and its growth. Hence we present the analysis of this sector first.

IV.1. Industry

Solan emerged as the major industrial hub of the state in the last few decades. It was the major industrialisation of Solan district which helped the share of industries in state GDP go up from about 1 percent in 1950s to 17.1 percent in 2000s. This also led to the creation of basic infrastructure in the district.

There are a total of 14 industrial areas in the district, as on 31st March, 2016. The status of plots construction, allotment and availability in these industrial areas is as follows:

Table IV. 1: Status of Plots/sheds/shops in Solan Industrial Areas

	(in number)		
	Plots	**Sheds**	**Shops**
Constructed/Covered	964	98	109
Allotted	916	97	104
Vacant	48	01	5
Closed	80	10	0

The notable dominance of industry, among other economic activities, started since 2003, when the state manufacturers received major tax incentives for a period of 10 years. These incentives are presented in Figure III.1.

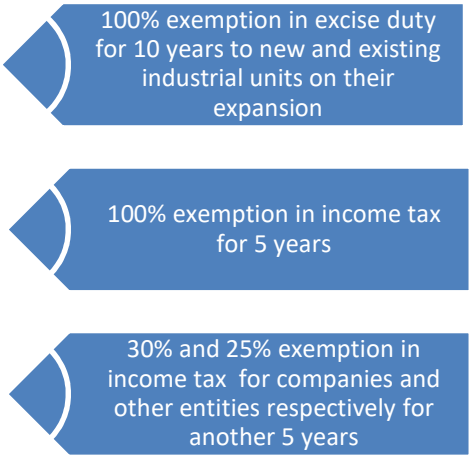
In addition to these, new industries were also provided a 15 per cent subsidy for capital investment though subject to a ceiling of Rs 30 lakh.

In particular, the hitherto nondescript town called Baddi in Solan grew up to become home to country's leading pharma and consumer goods. Other prominent industrial areas are Parwanoo, Waknaghat, Chambaghat etc. Waknaghat in Kandaghat is emerging as a sought-after destination for IT companies.

In particular, the Baddi-Barotiwala Nalagarh (BBN) industrial belt, as it is popularly called, has benefitted from the:

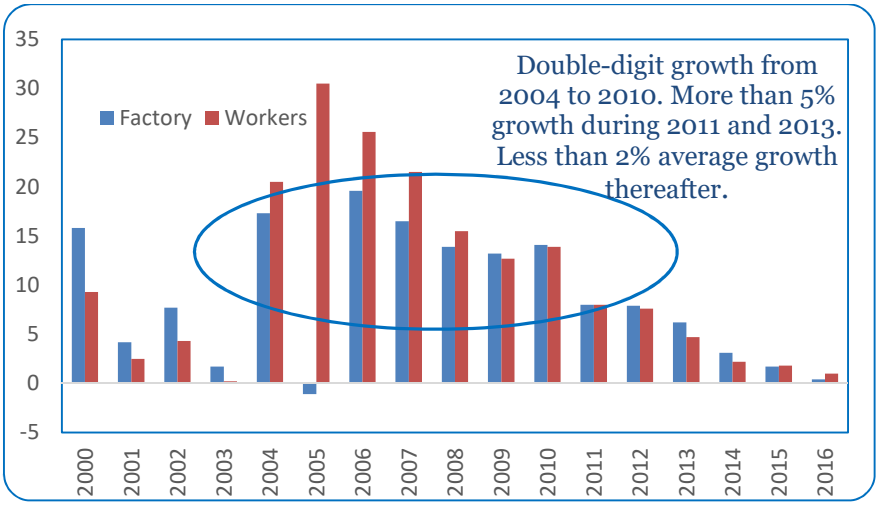
- tax incentives
- favourable terrain
- proximity to tri-cites of Chandigarh, Mohali and Punchkula and also to Delhi
- adequate power supply
- peaceful environment, low crime rate
- low capital cost, cheap land
- low extent of labour unionisation
- high phone and mobile density

Figure IV. 1: Tax incentives announced in 2003



The positive impacts of tax incentives to industry sector, announced in 2003, can be seen in the time-series of number of registered factories and workers employed, presented in the table below. The number of registered factories grew from 821 in 2003 to 2417 in 2013. Number of workers grew by more than 20 percent in the first few years of tax sops. However, post-2013, the pace of growth in both number of factories and workers slowed down significantly (Figure 12), due to withdrawal of incentives.

Figure IV.2: Growth in number of factories and workers during 2000 to 2016



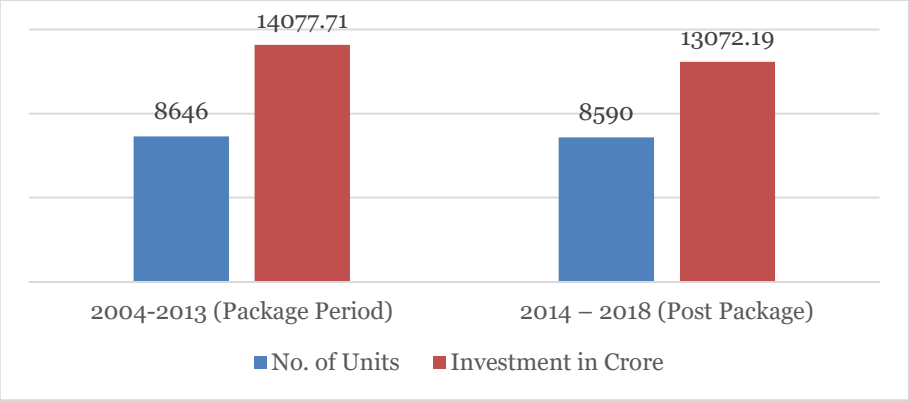
**Note: Number of factories and workers over the years, given in Appendix Table 1.*

As of now, there are about 2000 units operating in BBN area belonging to pharmaceuticals, textile, corrugated boxes, FMCG, IT and others. Pharmaceuticals and corrugated boxes enterprises have benefitted the most due to tax incentives and miscellaneous chemical, mechanical and electronics units have been the largest employers. In fact, this small town alone accounts for over 80 percent of investment of Himachal Pradesh. Baddi's share in state's total number of MSMEs as well as persons employed is also of equivalent proportion.

While post-2003, BBN industrial area exhibited a phenomenal success story, but some units had set up their base here more than two decades ago, in 1990s. Among the notable companies which have been operating much before the tax sops were announced are Vardhman Textiles Ltd. and Unichem. Vardhman Textiles has nine units in its 330 acres campus which includes four spinning, two processing, two weaving and one garmenting. The company continues to invest in the area.

The overall state investment scenario also continues to be healthy and *as per the HP Director, Industries, the investment in the state has been quite significant in the 4 years of post-package period as compared to the same during the 10-year package period.* The following chart presents the number of units and investment in the state during the package and post-packages periods. *In our interaction with the Director Industries, we came to know that an upcoming additional Rs. 2500 cr investment is expected in the state.*

Figure IV.3: Number of units and investment in industry in HP



Source: Director Industries, Shimla.

With respect to Exports, many units are exporting their products to various countries like USA, UK, Greece, Hong kong, Australia, Dubai, Russia, Canada, S. Africa, W. Indies, Singapore, China, Egypt, Japan & SAARC and Middle East countries. The following table presents the export value for the state as well as for Solan during 2003-04 to 2017-18.

Table IV. 2: Exports on a growth trajectory

Year	Export	Export Value	Share of Solan	Y-o-y growth
2003-04	530	530	100.0	
2004-05	458	458	100.0	-13.5
2005-06	431	431	100.0	-6.1
2006-07	634	634	100.0	47.3
2007-08	606	606	100.0	-4.5
2008-09	442	442	100.0	-27.1
2009-10	608	608	100.0	37.5
2010-11	1329	1329	100.0	118.6
2011-12	1993	1993	100.0	50.0
2012-13	4338	3931	90.6	97.3
2013-14	5003	4324	86.4	10.0
2014-15	5487	4938	90.0	14.2
2015-16	5849	5264	90.0	6.6
2016-17	6100	5490	90.0	4.3
2017-18	7872	7084	90.0	29.0

Source: Director Industries, Shimla.

The data shows that from 2003-04 to 2017-18, exports from Solan have grown by a CAGR of 20.3 percent.

IV.1.1. Industrial Schemes

Among some of the government schemes aimed at district/state industrial development are:

- **Industrial Development Scheme (GOI) for Himachal Pradesh and Uttarakhand, 2017,** effective from 1.04.2017 to 31.03.2022. Undertaking substantial expansion in manufacturing sector and services sector including Bio-technology and Hydel Power Generation Units upto 10 MW, all new industrial units and existing industrial units in both the states are eligible for incentives under the scheme except the industrial units mentioned in the negative list. The incentive mainly includes Central Capital Investment Subsidy Access to Credit (CCIIAC) at 30 percent of Investment in plant and Machinery.

- **Mukhya Mantri Swavlamban Yojana 2018**: The Chief Minister of Himachal Pradesh launched this scheme with the objective to provide employment opportunities to the youth in the state and to empower them. Main benefits of the Mukhyamatri Swavalamban Yojana are:

    - 25 percent investment subsidy for purchase of machinery on an input or investment of Rs. 40 lakh. In case of women entrepreneurs the subsidy will be 30% on the investment of Rs. 40 lakh
    - Interest subsidy of 5% for 3 years on the loan upto rs. 40 lakh
    - Land on 1% rent to the youth
    - Reduced stamp duty of 3% on purchase of land instead of 6%

- **State Mission on Food Processing (SMFP):** Ministry of Food Processing Industries (MFPI) had launched a new Centrally Sponsored Scheme (CSS)- National Mission on Food

Processing (NMFP) during the 12th Plan (2012-13) for implementation through states/ UTs. Further, the Govt. of India approved continuation of the Mission during the remainder of 12th Five Year Plan (2013-17). The basic objective of NMFP is decentralization of implementation of Ministry's schemes, which will lead to substantial participation of State governments/ UTs. This scheme has been delinked from Central Assistance and is continued by the State Government from 2015-16 onwards.

- **PMEGP (Pradhan Mantri Employment Generation Scheme/Central Govt.):** PMEGP is a credit linked subsidy programme of Central Govt. launched on 15th August 2008 by merging two schemes - Prime Miniter Rozgar Yojana and Rural Employment Generation Programme. Primary objective is to generate employment opportunities in rural and urban areas of the country by setting up of new self-employment units. Under the scheme the maximum cost of the project in manufacturing sector is Rs. 25 lakh and Rs. 10 lakh under Service Sector.

- **Rural Engineering Based Training Programmes (REBTP):** Schedule Castes, BPL rural candidates were given nine months skill training in the trades of electrician, motor mechanic, carpenter, computer, tally, beauty parlour etc. under REBTP scheme.

- **Chief Minister Startup Scheme (State Govt.) :** To help people who want to set up their own work, Himachal Pradesh Government has recently launched the new scheme in 2017, under which government excluded new industrial startup inspection for up to 3 years in the Himachal state. This scheme helps educated youth from job seekers to job creator. The main benefits of the scheme are:

    a. Government excluded new industrial startup inspection for up to 3 years
    b. Benefits of plots on 505 fixed rates as by the industries department for setting up industry
    c. Reduced stamp duty by 3 percent for start-up units
    d. Single window system for the new approval of the industries
    e. Financial assistance to the incubator (startup) organizations
    f. Self-attested certificates enough for official website to start industry/business

IV.1.2. Ease of doing Business

Department of Industrial Policy and Promotion (DIPP), Ministry of Commerce and Industry (MoC&I), Government of India (GoI) has taken up a series of measures to simplify and rationalize the regulatory processes (registration and inspection processes) and introduction of information technology as enabler to make governance more efficient and effective. A 98-Point Action Plan for improving the regulatory framework for business as part of easing the doing business in the country was shared and finalized at National Workshop of 'Make in India' held on 29th December 2014. The assessment, first of its kind, promoted both competitive and cooperative federalism among the States and Union Territories (UTs). The first wave of regulatory improvement measures further created a need to sustain the momentum of the regulatory reform. DIPP along with World Bank Group will carry out a

comprehensive business-to-government (B2G) feedback exercise this year whereby feedback will be taken from businesses on the quality of implementation of the reforms claimed by the States and UTs. The feedback scores are used to generate a ranking of States/UTs in terms of reform implementation.

Himachal Pradesh, as a business state, has maintained itself in the middle of the ladder in terms of the quality of the implementation of the reforms.

Year	2017-18	2016-17	2015-16
Ranking	16	17	17

With a combined scorecard of "Reform Evidence and Feedback" of 87.90%, the state currently ranks at the 16th spot under a label of "Fast Movers". The state has shown great progress in reform implementation in the area of Construction Permit Enablers and a decent growth in the area of Transparency Enablers. With 21 reforms still in the queue for approval, Himachal Pradesh lies far behind Uttarakhand which is a close neighbour having almost similar facilities and faculties at work. Uttarakhand stands at an impressive position of number 11 and has shown an even more impressive growth when it moved from a rank of 23 to 11 in the past 2 years. It is currently labelled as an "Achiever".

As the final scores of 2018 are still susceptible to change, Himachal Pradesh can do a lot to move up the ladder. According to the report of 2017, the state was yet to address the implementation gap in establishing online single window; conducting land and construction permit reforms, establishing electronic commercial courts. It has successfully looked into construction permit reforms but the areas still need work[5].

IV.1.3. Potential areas of industrial growth

Based on our desk research and stakeholder consultation in the district as well as in the state capital, few industrial sectors are identified as the potential sectors for overall growth. Pharmaceuticals continues to be the most important sector, given the huge investment which industrialists have already made in BBN area. Despite some constraints, which are discussed below, the sector gives a significant impetus to overall growth in the district.

Besides pharmaceuticals, Textiles and Corrugated Boxes are other key sectors in the district. But we present upcoming sectors like Information Technology and Food-processing as potential sectors for growth. All these 3 sectors are presented in the following sub-sections:

Pharmaceuticals

Baddi or BBN belt is known to be Asia's biggest hub for pharmaceutical formulation industry. *According to the representatives of Himachal Drug Manufacturers Association, every third medicine available in market is produced in this area. They also say that despite the*

[5] *Note: All the details and values have been taken updated last in November 2018.*

withdrawal of tax holiday, the units are less likely to shift their base because of major investments done.

The area houses big pharmaceutical companies like Abbott, Cipla, Cadila, Unichem, Dr Reddy, Torrent and Glenmark. There are more than 350 pharmaceutical manufacturing units located in Solan, of which about 300 are based in BBN area. Another about 50 units are cosmetic unit in BBN, which include big names such as Colgate, Godrej, Hindustan Unilever, Wipro and L'Oreal India. Unichem's first factory in the area began production 25 years ago and now with its manufacturing site covering a total plot area of the 1,32,000 sq.m and a total build-up area of 37,716 sq.m, it is the biggest formulation unit at Baddi.

Clearly, the pharmaceutical industry is already an established industry in Solan district and has a potential to give an upward push to the overall district economy, but it also faces some challenges. If these challenges are addressed, the industry is capable of putting India on not just Asia's map but also on world map of pharmaceuticals. We have done a SWOT analysis for Solan's pharmaceutical industry, based largely on stakeholders consultation, given as follows:

Table IV. 3: Pharmaceuticals – A SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
• **BBN industrial** area in Solan is the third largest pharmaceutical industry hub in the world in terms of volume of drug production6. • It is ranked at number 14 globally in terms of value of drugs manufactured here • The area manufactures more than 150 types of drugs, which are exported to over 200 countries world over • The annual turnover is of Rs 30,000 crore, of which Rs 9,500 crore involves exports • About 130 units comply with the World Health Organisation (WHO) norms and 15 units conform to the USFDA norms,	• Many SMEs are facing regulatory hurdles like delay in refund on Integrated Goods and Services Tax (IGST) payment. • Infrastructural blues - delayed 4-laning project on the Pinjore-Nalagarh section of National Highway (NH) 21-A due to high cost of land acquisition • No rail connectivity and high cost of transportation to other states like Punjab, Haryana from where the containers are sent to ports for export. • Asia's largest Truckers' Union – truckers charge exorbitant transportation cost, making products uncompetitive.	• Sanctioning of Rs 200 crore worth Bulk Drug Pharma Park and a Satellite extension centre of National Institute of Pharmaceutical Education and Research (NIPER) • A modern Drug testing Lab to be made functional which will help small-scale entrepreneurs save their huge expenditure on drug testing from places outside HP. • Common Facility Centre (CFCs) to be set up to help SMEs reduce their cost of production and make bulk drugs and medical devices affordable • Cluster development programme for pharma sector (CDP-PS) and Pharmaceutical promotion development scheme (PPDS) to be	• While withdrawal of tax incentives is not a deterrent, infrastructural bottlenecks may take investors away to other favourable states. • Drug testing laboratories are not given any subsidy in Uttarakhand and HP although the same is given in other special category states • According to a recent notification, it is mandatory for the medicines producers in India to comply with the norms of USFDA. This compliance requires an additional investment of Rs. 5-6 Cr per unit on infrastructure and for many companies, such investment is not viable. Hence, many are likely to shut down by 2020. • Rapid industrialisation has also resulted in lot of pollution.

[6] http://pharmapathway.com/baddi-emerges-global-pharma-hub/
http://ehealth.eletsonline.com/2016/02/baddi-shines-as-the-pharma-capital-of-india/

making them eligible for the international market.	•	implemented to promote and develop the pharma sector	

Information Technology

IT industry also received a major push because of the tax incentives announced in 2003. In addition to other manufacturing industries, IT Software and IT Services were also deemed to be manufacturing activities for the purpose of incentives for the industry. In fact, they were categorised as "thrust industry" as per the Rules Regarding Grant of Incentives, Concessions and Facilities to Industrial Units in Himachal Pradesh, 2004.

All policy instruments were made available to IT enables services too like call centres, medical transcription, back-office operations, revenue accounting etc. All IT software and service industries including Services and Training Institutions in IT were also eligible for all concessions and incentives applicable to industries.

While in case of special economic zones (SEZ), tax incentives are given only for exports, in case of Himachal Pradesh, even domestic sales were eligible for tax incentives, making the entire state a 'virtual SEZ'.

No sales tax was levied on IT products. Input tax credit (ITC) was given to the extent input was taxed, even though finished product was tax-free. The manufacturers of hardware components enjoyed a saving of about 3 percent due to excise duty exemption, even after paying the import duty on imported components. The manufacturers of high value addition items like optical storage devices, monitors, LCOS, LCD TVs, chipsets etc. benefitted even more than those of PCs and servers.

The SWOT analysis reveals the following:

Table IV. 4: Information Technology - A SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
• Classified as "thrust industry" • According to the latest Annual Report, 2017-18 of Department of Telecommunications, HP has the highest tele-density (telephones per 100 persons) of 153.96% • Power surplus state with cheap and stable power supply • Low capital cost • High literacy rate	• Not enough investors as yet. • The reasons behind poor response for investors could be the infrastructural constraints, less awareness of the schemes, no promotional campaigns etc.	• Waknaghat, in Kandaghat, has a huge potential for setting up an IT hub. In 2008, HP govt. had decided to develop an IT Park-cum-Township at Waknaghat Village (Mauja Majhol), Solan, on PPP model. That opportunity may be explored now. • Some renowned IT Universities, especially Jaypee Institute of Information and Technology, has developed their campus in Waknaghat. These institutes can readily make their students available for	• The 2008 project to develop an IT park in Waknaghat never took off. Now, 2 Software Technology parks (STP) are planned to set up at Gaggal in Kangra district and Mehli in Shimla district. This is a lost opportunity for Solan district.

• 8500 kms out of 13500 kms metalled road has optical fibre[7] • Permission for 3 shift operation in BPO/ ITES and 2 shift operation for women in hardware also.		jobs in the IT companies, if they were located in this area.	

Food Processing

Solan's agro-climatic conditions are favourable for the production of exotic fruits like kiwi, olive and strawberries. Kiwi's productivity is the highest in Solan, among all districts of HP. To encourage farmers to take up more kiwi cultivation, the HP government also provides training and financial assistance.

While most of these fruits are sold in the market for direct consumption but some of these are processed in some fruit processing units in the district. The Himachal Pradesh Horticultural Produce Marketing and Processing Corporation Ltd (HPMC) has a fruit processing unit located in Parwanoo in Solan district. This unit is the largest fruit processing unit of HPMC.

Table IV. 5: Food Processing - A SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
• Abundant local supply of fruits and vegetables, particularly exotic varieties • Changing dietary habits of people – given preference to processed food or fast food. • Low shelf life of fruits is a good reason to process the un-marketed surplus • Cheap labour available • Cheap electricity • High market demand from metro and other cities • Government as well as private cold storage facilities available on hire. • There are 12 cold chain units in the state, of which 5 are in Solan[8]. • Generates employment opportunities, particularly to women	• No organised Marketing strategies • Lack of proper infrastructure for storage and transportation. • Difficult to obtain Essentiality Certificate	• Availability of herbs which can be used to produce high value essence oil or aromatic oil • Cannabis, a high value narcotic crop, grows wildly everywhere in the state in abundance. If legalised, cannabis can be used for industrial purpose in the production of certain drugs and medicines. Hemp, which comes from another sub-species of cannabis is a high quality fibre and may be used in textile and paper industry.	• The production has to be significantly abundant to make processing viable. For many fruits, production is not enough.

[7] http://www.hp.gov.in/dittest/post/About-Himachal.aspx

[8] https://foodprocessingindia.co.in/state-profile-pdf/himachal-pradesh.pdf

IV.2. Agriculture

The climate of district Solan is sub-tropical to sub-temperate. The temperature ranges from 0° C in winters to 40° C in summers. The climatic conditions of the district are most suitable for the cultivation of stone fruits (mid hill zone), sub-tropical fruits (foot hill zone) and off season vegetables like; tomato, capsicum, ginger, French bean, cabbage, cauliflower, peas, etc.

The district receives an average annual rainfall of 1420.40 mm, mostly during monsoon. Snowfall is not a regular feature and is received in some parts of the district during December-January.

As per Census, 2011, the total geographical area of the district is 1,936 sq. km. (1,80,547 hectares) which constitutes 3.49 per cent of the total area of the state and ranks 9th amongst the districts. The net area sown in the district is 39,997 ha out of which 28,866 ha is sown more than once. Total cropped area, including fodder crops, is 68,864 ha, which is 38 percent of total area. Net irrigated area is 9,509 ha, which is 23.8 percent of the total net area sown of the district.

IV.2.1. Land-Use pattern

The land-use pattern shows that while the district's net sown area as percent to total area is much higher than the state average but has been declining over years. From 22.0 percent in 2000-01, the share of net sown area to total area declined to 20.5 percent in 2011-12 (Table IV.1). However, total sown area increased from 30.2 percent to 33.6 percent over the same period. This indicates the level of crop diversification[9] in the district. According to a study (S. Kumar, R. Singh and A. Sharma, 201810), Solan falls under high crop diversification area in the state. Also the district shows prevalence of high cropping intensity[11] due to the presence of fertile soil and easy accessibility of agriculture inputs in these districts.

The district also shows an increasing share of land used for non-agricultural purposes due to rapid industrialisation and prevalence of non-farm activities. From 3.7 percent in 2000-01, land used for non-agricultural purposes as percent of total area has increased to 7.0 percent in 2011-12.

Table IV.6: Land Use Pattern over years

	Area in hectares				Area as % to Total Area			
Year	Total area	Land used for non-agricultural purposes	Barren and uncultivated land	Net Sown Area	Gross Cropped Area	Land used for non-agricultural purposes	Barren and uncultivated land	Total unavailable land for agriculture
2000-01	1,77,592	6,561	14,372	22.0	35.9	3.7	8.1	11.8

[9] Crop diversification refers to the raising of various crops in a given area in a crop season.

[10] *"Nature and Extent of Agriculture Diversification and Economic Growth in Himachal Pradesh"*, Sandeep Kumar, Ranveer Singh and Amit Sharma, Agricultural Situation in India, 2018

[11] Cropping intensity is the number of times a crop is planted per year in a given agricultural area

	Area in hectares				Area as % to Total Area			
Year	Total area	Land used for non-agricultural purposes	Barren and uncultivated land	Net Sown Area	Gross Cropped Area	Land used for non-agricultural purposes	Barren and uncultivated land	Total unavailable land for agriculture
2001-02	1,80,235	9,602	14,485	21.2	35.5	5.3	8.0	13.4
2002-03	1,80,923	9,779	14,223	21.7	34.1	5.4	7.9	13.3
2003-04	1,80,923	10,871	14,132	21.5	34.2	6.0	7.8	13.8
2004-05	1,80,923	10,505	13,805	21.8	35.9	5.8	7.6	13.4
2005-06	1,79,975	11,047	13,270	21.3	35.0	6.1	7.4	13.5
2006-07	1,80,923	12,149	12,399	21.2	35.4	6.7	6.9	13.6
2007-08	1,80,923	12,212	12,413	20.6	35.2	6.7	6.9	13.6
2008-09	1,80,923	12,950	11,705	20.8	35.2	7.2	6.5	13.6
2009-10	1,80,923	12,545	11,710	20.7	35.5	6.9	6.5	13.4
2010-11	1,80,923	13,293	10,903	20.9	34.5	7.3	6.0	13.4
2011-12	1,80,923	12,623	11,862	20.5	33.6	7.0	6.6	13.5

Source: District Statistical Abstract, Solan

IV.2.2. Agricultural schemes

There are a number of state and centrally sponsored schemes in the state of Himachal Pradesh. District Solan gets particular benefit of Pilot Weather based crop insurance scheme (WBCIS)**.** Tomato crop of Solan is covered under this scheme since Rabi season of 2008-09. During this year, tomato and ginger crop of kharif season and capsicum crop of rabi season of Dharampur block has also been covered under WBCIS.

The main objectives of this scheme are:

- To provide insurance coverage and financial support to the farmers in the event of failure of any of the notified crop as a result of natural calamities, pests and diseases.
- To encourage the farmers to adopt progressive farming practices, high value in-puts and higher technology in Agriculture.
- To help stabilise farm incomes, particularly in disaster years.

IV.2.3. Major Crops

The major crops grown in the district are foodgrains viz. wheat, rice, corn and barley. Besides, the district is famous for the production of a variety of vegetables, fruits and also flowers. Most of these are high-valued crops.

With respect to area under crops, wheat is grown in the maximum area (Table IV.2), covering about 40 percent of the total area under food crops. This is based on the data on area under crops, available till 2011-12. Wheat is closely followed by corn. Foodgrains account for almost 90 percent of total area under food crops.

However, the share of foodgrains is gradually declining in favour of vegetables and fruits. The area under fruits grew from 630 hectares to 798 hectares between 2008-09 and 2011-12.

Table IV.7: Year wise Area according to main Crops in District Solan

	Area in hectares				Share in Total (%)			
	2008-	2009-	2010-	2011-	2008-	2009-	2010-	2011-
Some food Crops								
1. Grain								
Wheat	25,346	24,377	24,714	24,495	42.1	39.7	39.9	40.9
Corn	22,733	26,177	23,961	23,284	37.7	42.6	38.6	38.9
	4,260	3,122	2,094	1,967	7.1	5.1	3.4	3.3
Barley	1,836	1,437	1,659	1,696	3.0	2.3	2.7	2.8
Small and other grains	-	-	-	60	-	-	-	0.1
2. Pulses								
Gram	34	44	8	49	0.1	0.1	0.0	0.1
Other Pulses	2,169	2,259	1,366	1,373	3.6	3.7	2.2	2.3
Total Food grains	56,378	57,416	53,802	52,924	93.6	93.5	86.8	88.4
3.Other Food grains								
Sugarcane	77	144	26	24	0.1	0.2	0.0	0.0
Potato	77	74	64	73	0.1	0.1	0.1	0.1
Fruits	630	544	746	798	1.0	0.9	1.2	1.3
Onion	25	25	35	36	0.0	0.0	0.1	0.1
Other Vegetables	837	772	4,518	3,829	1.4	1.3	7.3	6.4
Chilli	2	23	144	13	0.0	0.0	0.2	0.0
Ginger	403	405	361	356	0.7	0.7	0.6	0.6
Other Spices	4	-	193	56	0.0	-	0.3	0.1
Other Food Crops	2,055	1,987	6,087	5,185	3.4	3.2	9.8	8.7
Total Food Crops	58,433	59,403	59,889	58,109	97.0	96.7	96.6	97.1
4. Some not edible crops								
Edible Oil, Peanuts, Sesame	169	353	228	310	0.3	0.6	0.4	0.5
inedible oilseeds, Musturd	474	463	673	467	0.8	0.8	1.1	0.8
Cotton and other fiber	-	3	-	18	-	0.0	-	0.0
5. Fodder crops	1,170	1,200	1211	950	1.9	2.0	2.0	1.6
Total Edible and inedible	60,246	61,422	62,001	59,854	100.0	100.0	100.0	100.0

Source: Agricultural Department of Solan, Himachal Pradesh.

The data on values of output of different crops presents a different picture as the vegetables and fruits grown are high-valued items. Hence, with respect to value of output, vegetables account for almost 60 percent of the total crop output, while foodgrains' output is just about 20 percent.

Table IV.8: Value of output of crops and their shares in total output

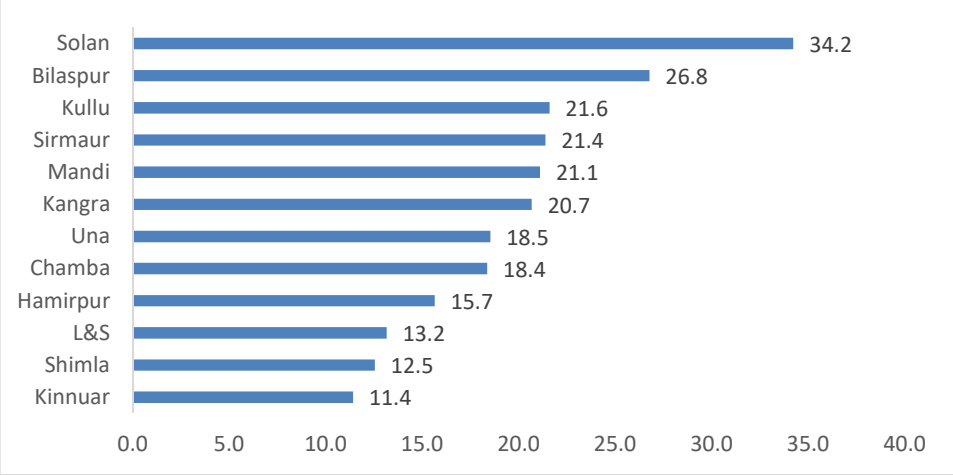
	Value of output					Share in Output			
	2011-12	2012-13	2013-14	2014-15	2015-16	2012-13	2013-14	2014-15	2015-16
Value of output	63908	74977	103786	99142	96605	100.0	100.0	100.0	100.0
Cereals	16220	16017	19505	19054	19215	21.4	18.8	19.2	19.9
Pulses	404	667	92	268	298	0.9	0.1	0.3	0.3
Oil Seed	252	267	235	226	150	0.4	0.2	0.2	0.2
Sugar Group	72	113	11	16	33	0.2	0.0	0.0	0.0
Fibre Group	0	0	0	0	742	0.0	0.0	0.0	0.8
Dyes & Tanning	301	301	301	301	301	0.4	0.3	0.3	0.3
Drugs & Narcotics	0	0	0	0	0	0.0	0.0	0.0	0.0
Condiments & Spices	2850	1643	2823	3641	1722	2.2	2.7	3.7	1.8
Fruits	2069	6423	6537	8759	9910	8.6	6.3	8.8	10.3
Vegetables	37212	43922	69083	61147	57519	58.6	66.6	61.7	59.5
Miscellaneous Crops	988	1210	1324	1333	1333	1.6	1.3	1.3	1.4
Floriculture	123	215	190	354	1304	0.3	0.2	0.4	1.3

	Value of output					Share in Output			
	2011-12	2012-13	2013-14	2014-15	2015-16	2012-13	2013-14	2014-15	2015-16
Back Yard	229	203	284	240	231	0.3	0.3	0.2	0.2
By Products	3188	3996	3401	3803	3847	5.3	3.3	3.8	4.0

Source: District Domestic Product of Himachal Pradesh, 2011-12 to 2015-16, DES, HP

The importance of vegetables in Solan's agricultural economy is also evident in the fact that its productivity is significantly high. The comparison of its vegetable productivity with other districts reveals that Solan's vegetable productivity is the highest among all the districts of HP.

Figure IV.4. Productivity of Vegetables for all districts of HP (tonnes per hec)



Source: District Statistical Abstract, Solan

The productivity of vegetables owes also to the practice of protected cultivation in Solan district. The role of protected cultivation is discussed separately in the next sub-section.

Besides, the climate of the district is very conducive for the cultivation of mushroom. As an ancillary horticulture activity, cultivation of mushroom is also being promoted by the Govt. in the state. Directorate of National Mushroom Research & Training Centre located at Chambaghat, Solan is looking after the training needs of the entrepreneurs willing to grow mushroom. This department is also actively engaged in the promotion of mushroom cultivation. Pasteurized compost for mushroom production is produced at two departmental mushroom development projects located at Chambaghat & Palampur and distributed to the mushroom growers.

For Solan's crop production, we have done the SWOT analysis, which is as follows:

Table IV. 9: Crop Production - A SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
• Vegetable productivity is the highest across all the districts of HP. • Among fruits, productivity of kiwi (9.2 tonnes per hec) is the highest across	• Production of some fruits, especially apples, is	• Ideal for food processing units, with abundant	• Many areas continue to be rainfed and are

Strengths	Weaknesses	Opportunities	Threats
districts. The Himachal Pradesh government has been encouraging farmers to take up kiwi cultivation by providing training and financial assistance. • Area under apricot is the highest in Solan among all districts of HP • Crop diversification and cropping intensity is among the highest in the state. • Easy availability of agricultural inputs • Good market demand due to proximity to big cities like Delhi, Chandigarh. • Solan's yield is higher than state average for crops like wheat, maize, rice and ginger. • Solan's fertiliser consumption is only 6% of total state's consumption. Highest consumer is Shimla (26%) • Although total no. of operational holdings have decreased from 67000 in 1995-96 to 60833 in 2011-12, holdings under mango increased from 65 to 91; Peach from 3 to 29; Tomato from 1640 to 3361.	shrinking due to climatic changes • Expensive transportation is a challenge • Process of obtaining Essentiality Certificate is very difficult.	supply of fruits and vegetables. • Climatic conditions are ideal for exotic fruit, kiwi, which has high demand from Delhi, Punjab and even Mumbai • Generates much more employment opportunities as compared with manufacturing or services sector	unirrigated. According to the District Department of Agriculture, as on 31st Aug, 2018, only 33% of the cultivable area is irrigated.

IV.2.4. Protected Cultivation

Despite the impressive growth in horticulture, the production is unable to meet the requirement. It is for this reason that a technique called protected cultivation is adopted to increase the production even during off-season months of the year. The protected cultivation is a technique of growing crops under controlled microclimate. It is capital intensive activity and the government provides subsidy for establishing greenhouses. Thanks to many public and private institutions, which are performing different supportive functions, in states like Himachal Pradesh, Maharashtra and Karnataka, this technique grew very fast in these states.

Our consultation with the Deputy Director of Agriculture and Horticulture Development Officer suggests that cultivation of high-valued vegetables and horticulture crops in greenhouses allows farmers to grow more cash crops on small plots. This is particularly useful is areas which are water deficient and traditional cropping is not viable. The consultation revealed that, as of 31st August 2018, an area of about 2 lakh sq mtr. is under protected cultivation.

Horticulture

Within HP, the technique of protected cultivation is quite prevalent in Solan district, which is a hub for horticulture produce and marketing. Tomatoes, plums, apricots, kiwi, apples and seasonal vegetables constitute major economic activity of the town. *According to District Department of Horticulture, total area under horticulture in 6081.03 hectares, as on 31st August, 2018. A total of around 16500 orchardists produced about 8000 MT fruits up to 31st Aug, 2018.*

Mushrooms are widely grown in town and contributes to the economy of the inhabitants, which is why Solan is also called the Mushroom city of India. There are a total of 212

mushroom growers engaged in mushroom cultivation who produced a total of 418.7 MT mushroom in 2017-18.

Since vegetables and *fruits* cultivation are major practices in Solan, protected cultivation has emerged as the most important technology for ensuring higher farm productivity and income. According to the research paper by Punera et al. (2017), the area under protected cultivation promoted by National Horticulture Mission in Himachal Pradesh has been found nearly 1.5 lakh ha in 2014-15.

Research suggests that both yields and net returns are higher in the case of protected cultivation as compared with open-field conditions[12]. Capsicum crop grown in the naturally ventilated poly house showed four times more yield and yield components compared to those grown in the open field.

Floriculture

Himachal Pradesh has emerged as Flower State of India due to its congenial agro-climatic conditions for growing different types of flowers round the year under protective covers. As of now, the protected cultivation of flowers is limited to a few areas in the district. However, according to a press release dated 20th March, 2018, the state government has requested for a funding of Rs. 150 crore for 'Himachal Pushp Kranti Yojna' for next five years. This project aims towards the protected cultivation of flowers to promote the agenda of growth and development aggressively during the next five years.

According to the representative of Horticulture Department in Solan, farmers get subsidy in polyhouses to grow plants like chrysanthemum, rose and carnation. There is very high demand for polyhouses but the government is unable to meet this demand due to budget implications.

Protected cultivation of flowers not just increases the productivity but the quality of flowers raised is much better as compared with that grown in open field, which is why these are mainly used to meet export demand (Nimbrayan, Parveen & S. Chauhan, R & Vedparkash Mehta, Dr & Bhatia, Jitender. (2018). While initial cost of protected cultivation is high but can be recovered in 3-5 years, depending upon the crops grown. The internal rate of return (IRR) varies from 31 per cent for carnation with capsicum to 73 per cent when the only carnation is grown.

The SWOT analysis of Protected cultivation is as follows:

Table IV. 10: Protected Cultivation – A SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
• During summer and winter season, it is extremely difficult to grow vegetables in open field conditions, hence protected structures help in	• Very high initial cost. Without subsidy, farmers are	• Protected cultivation being adopted for only few horticulture	• Lack of insurance coverage against income

[12] Nimbrayan, Parveen & S. Chauhan, R & Vedparkash Mehta, Dr & Bhatia, Jitender. (2018). A Review on Economic Aspect of Protected Cultivation in India. 43-59.

Strengths	Weaknesses	Opportunities	Threats
growing high-value crops round the year by giving protection from the excessive heat and cold. • High productivity and efficiency in crop production • Financial (subsidy) and technological assistance provided by govt. • Several central as well as state govt. schemes for the development and promotion of protected cultivation, like Horticulture Mission for North East & Himalayan States (HMNEH) • The protected cultivation safe guards the farmers from weather vagaries, monkey menace and wild animals • It provides opportunities to educated unemployed youth for better livelihood • Round the year employment • Vegetable cultivation is more popular as they take less area to grow and their life-cycle is short.	not likely to invest in poly-houses • The total cost of erection is Rs. 10 lakh per 1000 sq.m., of which 80 per cent is paid by the govt. • Short life of poly-sheet and infestation of insect-pest • Occurrence of windstorms, hailstorms • 100% planting material of the poly house varieties are imported and cost of seeds and planting materials is very high[13]	crops. May be used extensively for floriculture as well, to make protected cultivation sustainable • Development of sustainable poly-houses which have no negative environmental impact • Development of low cost poly-houses. • More varieties of mushroom may be grown, given their market demand, low investment, minimum requirement of space and high value.	and production risks is detrimental for growth of area under protected cultivation

IV.3. Services

Tourism

Among services sectors in Solan, Tourism is the most promising sector and potential sector for district growth. The fact that tourism itself encompasses several other service industries like hotels, restaurants and transportation services, growth in tourism positively impacts growth in these industries due to direct and indirect effects.

Tourism is one of the most important sectors for any economy in terms of foreign exchange earnings and creation of employment opportunities. The state, as a whole, is endowed with topographic diversity, historical monuments and religious shrines. Domestic tourist inflows in the state increased from 11.04 million in 2009 to 17.12 million in 2015. Sustainable Tourism Policy, 2013 was formulated for promoting sustainable tourism without damaging the ecology and environment.

The district of Solan has many tourism attractions which include 21 sacred and religious sites and 7 points of interest. Some of the famous religious sites are Kali ka Tibba in Chail, Mohan Shakti Heritage Park in Solan, Manki Point, Christ's Church and Gilbert Trail in Kasauli.

There are some government schemes implemented in the state to boost tourism. These are:

[13] *"Protected Cultivation of Horticulture Crops"*, C. V. Reddy, Rural Pulse, Issue: XX March – April 2017.

- **Har gaon ki kahani:** This initiative was started by HP government in 2010 in which one village was selected in each of the districts of the state and fascinating stories and folklores related to these villages were used to attract tourists. This initiative was meant to boost rural tourism in the state.
- **Homestay scheme:** This was launched in 2008 with the aim to provide clean, comfortable and affordable supplementary accommodation to tourists in rural areas. This scheme is a popular scheme in the district. Under this scheme, a minimum of 3 rooms in a dwelling are allowed to be commercially used as homestays for tourists.
- **Integrated Development of Rural Areas as a Tourist Circuit:** The main objective of this scheme is also to develop the rural tourism. Two villages of Solan district have been developed under this scheme.

The consultation with the Tourism department reveals that the district has over 302 listed hotels where tourists can avail their stay while exploring the expansive flora and fauna of this district. In 2017, around 12 lakh domestic tourist visits and 6454 foreign tourist visits were undertaken in Solan district. Most popular destinations are Kasauli and Chail.

Table IV. 11: Tourism – A SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
• Bestowed with natural grandeur at its best - picturesque locations, snow-capped mountains, lush green valleys, a cool climate and hospitable people. • Asian Development Bank (ADB) has sanctioned a loan of US$ 95 million to boost tourism in HP. • Pleasant weather during summers which makes it an ideal location to travel to escape the summer heat. • Terrain ideal for adventure activities. • Homestays are becoming popular and number of homestays have increased to 92.	• Inadequacy of transport facilities. • Overcrowding at popular tourist spots. • Inefficient marketing of less popular, more scenic places. • Insufficient maintenance of tourist spots like temples and lakes. • Insignificant contribution in local living standards by revenue generated through tourism. • No direct connectivity by air and by train	• Solan district contains many unexplored regions. • The sanctioned loan can be used to bring back the glory of many tourist spots lost due to excess commercialisation. • Rich potential for Eco-tourism and wildlife tourism. • HP has a rich culture and cultural festivals in all seasons are a huge investment opportunity. • Opportunities in handicraft and handloom sectors. • Develop new tourist spots to boost tourism. • Develop tourism related infrastructure through PPP mode. • Develop an airport in a suitable place, like Kandaghat to make accessibility easier.	• Culture is highly sensitive and has only been kept alive because of being far from the happening world. • Deforestation is a serious threat to flora and fauna of this place. • Clearing of forest to grow drug plants. Major attraction for drug addicts. • Unplanned construction. • Maintenance of heritage monuments. • Environment rules are not followed in the state. • Various other places in India are providing stiff competition.

Education

Solan is fast developing as education hub of Himachal Pradesh with many established educational, technical and professional institutions. This has also helped in generating employment to people of the town. Among the famous higher educational institutes are:

- Shoolini University – Established in 2009, this is India's first and highest ranked private university in Bio-technology. The university has a research driven model and offers programmes in Biotechnology, Management Sciences, Liberal Arts, Engineering, Sciences, and Pharmaceutical Sciences. In fact, it is the first university in the country to offer research programme at undergraduate level.
- Jaypee University of Information Technology (JUIT) – This is a private aided university located in Solan, established in 2002 and offers undergraduate, postgraduate and doctoral level studies and research in engineering and applied sciences disciplines.
- Dr Yashwant Singh Parmar University of Horticulture and Forestry – It is a government university and offers undergraduate, postgraduate and doctoral courses in horticulture, forestry and allied disciplines. The university has three colleges, namely, the College of Horticulture, the College of Forestry, and the College of Horticulture and Forestry Neri, India (Hamirpur) which are subdivided into 14 departments and are looked after by a faculty of over 500 scientists and teachers. It has a school specialized in the study of apples, called Apple School, Nauni. The department of management is under the college of horticulture providing degree in three basic courses - Marketing, Finance, and Human Resources with agribusiness.
- Green Hills Engineering College – Offers various undergraduate engineering programmes
- Institute of Engineering and Emerging Technologies – Located in Baddi, it offers undergraduate courses in engineering along with postgraduate programmes in computer applications and management studies.

With regard to school education too, there are many good high-rated schools in the district. However, as compared to Solan, its neighbouring district, Dehradun is a well-known and established education hub for the past many years. The city, Dehradun, is called the "capital city of India".

The comparative assessment of Solan and Dehradun, using the District Elementary Education Report Cards[14], presents the following key points:

- Dehradun district saw its number of schools increase from 1978 in 2007-08 to 2457 in 2016-17, translating into a growth of 24.2 percent, more than double the growth seen in Solan (10.7 percent). The total number of schools, in Solan, increased from 1216 in 2007-08 to 1346 in 2016-17
- Total enrolment in Dehradun schools saw a stupendous growth of 73.3 percent over this period, while enrolment in Solan grew by just 8.4 percent.
- Number of private schools in Dehradun, at 1045, is 4 times that in Solan (257) whereas number of government schools in both the districts are almost equal – 1089 in Solan and 1379 in Dehradun.
- Enrolment in government schools in Dehradun is 1.5 times than in Solan. In contrast, enrolment in private schools in Dehradun is 4.5 times that in Solan.

[14] *District Information System for Education' (DISE), 2016-17*

- The time series of these characteristics for Solan shows that while number of government and private schools have been increasing, the enrolment in government schools is on a decline, and that of private schools is picking up. This shows that the preference for government schools is decreasing, in favour of private schools.

Figure IV.5: Number of Schools in Solan

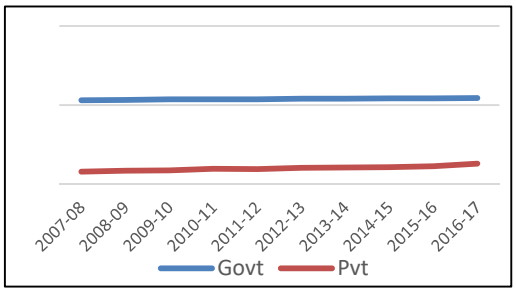
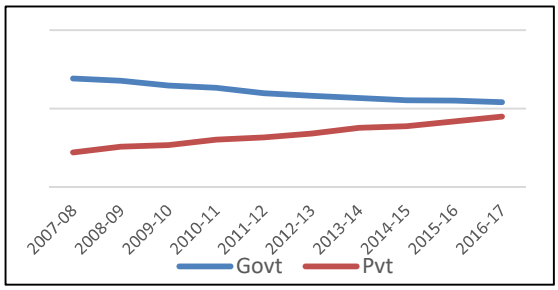


Figure IV.6: Enrolment in Schools in Solan



Source: District Information System for Education' (DISE), 2016-17

These data insights show that education is another potential area for growth. The SWOT analysis is as follows:

Table IV.12: Education – A SWOT Analysis

Strengths	Weaknesses	Opportunities	Threats
• Solan is home to India's only and highest rated university in Biotechnology. • Like Dehradun, Solan is also an excellent location for educational facilities, providing pollution free environment.	• Some of the universities are not so known outside HP as these have their own selection process instead of accepting scores of nationally conducted exams like JEE or NEET.	• Increasing enrolment in private schools gives an opportunity to invite more private players to set up schools in the district. • Marketing strategies to be adopted to publicise the institutes outside state.	• Tough competition from Dehradun




V. HUMAN RESOURCES AND INSTITUTIONAL CAPACITY

This chapter briefly recapitulates the key characteristics of the human resources in the district, and educational and training institutions available.

V.1. Literacy Rate

According to 2011 census, 83.68 percent of the district population is literate which is higher than **state** *average of 82.8 percent.*

- Male literacy rate is 89.56 percent and female literacy rate is 76.97 percent.
- Rural literacy rate is 82.22 percent and urban literacy rate is 90.41 percent. Rural literacy rate of the district is higher than state rural literacy rate (81.85) and country level literacy rate (67.77). Urban district literacy rate is lower than that of the state (91.1) and country (84.11).
- Solan district ranks 5th in terms literacy in the state.

V.2. Occupational Structure

- According to 2011 census, total workers in the district were 51.5 percent of the population. Of these, 37.8 percent were main workers and 13.7 percent were marginal workers.
- Male workforce participation rate was 61.5 percent while female participation rate was 40.0 percent.
- Of the total employed persons, 50.7 percent are employed in agricultural activities. The participation rate of male workers in agriculture is just 37.4 percent whereas that of women is as much as 74.0 percent. This translates to the share of women in total agricultural workers to be 53.1 percent.

V.3. Skill Development/Vocational Training institutes

- As per 2011 Census, there were 28 vocational training institutes in Solan. These institutes include short-hand training institutes, type-writing institutes, MS-Office training institutes and others.
- The latest data shows that as compared to other districts, Solan is one of those which have high penetration of vocational training capacities in terms of number of institutes and their seating capacities. According to the Department of Technical Education, HP, Solan has 47 vocational training institutes[15], with the total seating capacity of 3338 seats. The vocational training density, as measured by number of seats per 1000 population, is 5.7, which is third highest in the state after Lahaul & Spiti and Hamirpur.

[15] *https://www.nsdcindia.org/sites/default/files/files/hp-sg-presentation.pdf*

- We also had an interaction with a faculty member of Solan's biggest Industrial Training Institute (ITI). According to him, two big and renowned ITIs are located in Solan town and in Nalagarh town.
- These institutes provide training on several technical and non-technical fields. Among technical fields are civil, automobile, mechanical and electrical. Within these fields, training is imparted on many industry-relevant activities like machine-working, machine fitting, plumbing, wiring, welding and carpentry etc.
- Among non-technical fields are sewing, tailoring, typing, front-office management, food production etc.
- There is 100 percent placement and students get jobs within the state, outside state and even in other countries.
- Besides, the MSME units which are located in Solan's industrial areas, like Baddi and Nalagarh, also train fresh recruits as per the industry requirement. These units rather prefer the untrained fresh persons for recruitment as they are cheap to hire and very enthusiastic to work.
- The overall feedback is that lot of skill training initiatives are being taken so that the mandate of employing at least 80 percent of workers from within the state, is fulfilled.




VI. RECOMMENDATIONS

This Chapter summarises the recommendations and suggestions that flow from the analyses in the foregoing Chapters.

VI.1. Recommendations for Industrial growth

- Mandate to employ a minimum of 80 percent labourers from within the State to be relaxed for industrial units. Solan, being highly industrial and hence labour intensive, needs labour much higher in number than available in the district, and such a relaxation will also prevent mis-reporting practices.

- *Our consultation with the members of BBN Industrial Association revealed that the industries welcomed the government's Industrial Development Scheme for HP and Uttarakhand, 2017 but proposed their recommendations regarding the scheme so that the industries are able to avail full benefit of the scheme.* These are:

    - The scheme does not provide any incentive on installing refurbished or reconditioned Plant & Machinery (P&M), even if imported from other countries, which this incentive was available in the previous industrial development scheme. Hence, it is recommended that such incentive may be provided, at least in the cases if P&M are imported for the first time by the industry. This incentive will be very beneficial for the industries whose P&M are not manufactured in India and have to be imported but they depend on refurbished and reconditioned machines as new machines turn out to be very expensive. Some examples of such machines are offset printing machines, rolling mills for metal industry, CNC hobbing and shaving machines for Light Engineering industries etc.

    - The scheme mandates an appraisal of a Scheduled Bank or Financial Institution before an assistance is sanctioned by Empowered Committee. This means that the industries have to necessarily borrow from a bank or an FI to avail the benefit of the scheme. Such mandate was not there in earlier scheme. This mandate will not allow the industries, which do not want to borrow, to avail the benefits of the scheme. Also it is recommended that NBFCs may be included in the list of FIs, as many industries prefer NGFCs over Banks and other FIs.

    - It is recommended that a cut-off date may be announced for consideration of Value of Gross Block for the purpose of calculating the 25% additional investment in P&M.

    - For the pharma industries, most of the essential components are not considered as P&M, so industries are not able to avail the full benefit of the scheme. These essential components are testing laboratories to conduct tests from RM Stage to finished goods stage within the unit; heating/ventilating/air

conditioning systems; and specified Blister and Strip packaging machines. It is recommended that these components be considered as units' P&M, so that pharma industries obtain benefit of the scheme.

- Industrial plots may be allotted only after the basic infrastructure is in place. In Mamlig industrial area, for example, electricity is not yet available and plots have been allotted.

- The exorbitant transportation cost charged by the truckers is the biggest challenge for industries. The Truckers' association in the district is the largest in Asia and is extremely influential. The development of proper rail connectivity appears to be only solution recommended by the stakeholders. The rail connectivity will also facilitate easy and fast accessibility and cheap transportation, especially of freight.

- Cluster development programme for pharma sector (CDP-PS) and Pharmaceutical promotion development scheme (PPDS) to be implemented to promote and develop the pharma sector.

- Subsidy support may be considered for Drug Testing Laboratories in the HP, as given to those in other Special Category States (SCS).

- Consider making exemptions in mandates to comply with the norms of USFDA for drugs and medicines, as this compliance turns out to be very expensive.

- Obtaining the Essentiality Certificate to be made simpler. This is a major bottleneck for investors who wish to set up a unit in the district.

- Promote rural industrialisation by focussing more on food processing which has abundant availability of raw material from agricultural produce. Also, there is availability of labour and huge market demand from district, other states and even other countries.

- For food processing industry, production of essential oil or aromatic oil may be explored. In some areas of the district, farmers have started cultivating herbs like celery, parsley, oregano which can be processed and converted into high value products like essence oil for use in processed food products and also in cosmetic and healthcare products. Besides, essential oils also has a big demand in international agribusiness.

- Explore the opportunities for legalising the cultivation of cannabis, which grows wild in the state in abundance. Recently, the neighbouring state, Uttarakhand, became the first Indian state to legalise the cultivation of hemp crop, purely for industrial purposes. This may be tested in HP for yielding high-quality fibre, and for industrial and medicinal uses. A source of high-quality fibre and medicinal properties, hemp is a very high-value crop with huge international demand.

VI.2. Recommendations for Agricultural growth

- High returns and productivity and also assistance by the government in providing subsidy to the tune of 80 percent of infrastructure cost, have all resulted in a very high demand for polyhouses. But for obvious budget constraints, government cannot give subsidy to all and forever. Hence, proper training should be imparted and benefits of protected cultivation should be popularised. Some of the research findings which support the benefits of protected cultivation, with or without subsidy are given in Box 1.

- More state budget may be considered to be allotted for subsidies towards development of poly-houses as current budget is not sufficient to meet the huge demand.

- Protected cultivation should be used for growing exotic vegetables and also flowers which have high market value, have good market demand and give significant returns to growers.

- Post-harvest management, cold storage and suitable air-conditioned transportation systems / vehicles may need to be arranged to bring efficiencies in the transport of perishable horticulture and floriculture items

- New marketing strategies will need to be developed to market the horticulture and floriculture produce from the district, that are produced in abundance and round the year using Protected Cultivation.

- Amongst the recommendations have included enabling systems and linkages for the farmers to earn the greatest portion of the consumers' rupee. One of the suggestions was to exploring whether a State undertaking like the HPMC may be best-placed to procure and market agriculture produce thus enabling a better market realisation for producers than they are able to earn from the chain of middle-men.

- Agricultural skills' training needs to be imparted to promote cultivation of high-valued and high-demand crops like exotic fruits, flowers, mushrooms, etc. These skills may include flower handling, packaging and palletising; nursery-raising; production of vermi-compost; watershed management; installing and fitting of greenhouse, and so forth.

- The strategy of promoting rural industrialisation through food processing is appropriate for Solan since there is an abundant availability of raw material from agricultural produce. Also, there is availability of labour and huge market demand from the district, neighbouring States, and even from the export market.

- *The representative of Department of Agriculture revealed that some farmers have started growing unconventional exotic vegetables like celery, parsley, broccoli, red cabbage, Chinese cabbage since last 4-5 years. These are mostly grown in Sadhupul region and have so far covered an area of about 400-500 hectares.* Protected cultivation may be explored for growing these exotic vegetables as these are dependent on monsoon.

Box 1: Benefits of Protected Cultivation

A study (Punera et al. : Economics and Institutional Aspects of Protected Cultivation in Himachal Pradesh) finds that the quality and life of polyhouses constructed by the farmers without subsidy was found better and longer because under the contract system, the quality of material was determined by the private contractor.

The study also reveals that "*under diversified cropping of carnation and colour capsicum, the net present worth for carnation and diversified pattern is positive and therefore, the planting is beneficial in both the cases. The net present worth, benefit-cost ratio and internal rate of return were found to be lower as compared to the export-oriented and single carnation growing farmers. The cultivation of flowers is more profitable than cultivation of colour capsicum. So, growing flowers under poly-house is a profitable venture for farmers in the study area".*

The sensitivity analysis for export-oriented famers revealed that cultivation without subsidy was also profitable as the farmers can have a positive net income which is around 75 per cent of the income obtained with subsidy and IRR is as high as 58 per cent. Thus, improved farming practices and better prices in export market can make this technology financially viable for the growers. The sensitivity analysis has shown that practising protected cultivation of high-value flowers is profitable even if no subsidy were provided. This was also supported by the fact that some of the farmers had constructed their own poly-houses without availing any subsidy from the government.

- *During our interaction with district administration, it was discussed how obtaining the Essentiality Certificate[16] was a big hindrance for new investors to the state.* Based on their suggestions, it is recommended that the process of getting Essentiality Certificate be made easier.

- With regard to mushroom cultivation, it is recommended that more varieties of mushroom should be grown. At present, only button mushroom are grown in the district. Other popular varieties should be cultivated like oyster mushroom or Portobello mushroom.

[16] Section 118 of the HP Tenancy and Land Reforms Act does not allow non-agriculturist bona fide Himachalis to buy land, making them the "second class" subjects in their own state. The government leases land or gives relaxation to purchase land for specific industrial, tourism, hydropower projects and set up institutions on conditions mentioned in "essentiality certificate".

VI.3. Recommendations for Service sector growth

- Promotional campaigns may be launched to boost tourism, especially among foreign tourists, to existing and new tourism destinations in Solan.

- The Process of setting up hotels and lodging houses may be reviewed and the process made easier. According to the District Department of Tourism, obtaining a No-Objection-Certificate (NOC) for hotel registration takes an average of two years because of infrequent Gram Sabhas that provide these NOC certificates. There are other clearances also to be sought, like from the Forest dept. and the State Pollution Control Board etc. It is recommended that in order to save time, the unit should send the requisition application directly to DC Office who should then send it simultaneously to various departments for clearances, or a similar single-window clearance may be implemented.

- New tourist destinations like the artificial lake in Solan, or recreational and amusement parks, may be studied for their feasibility and promotion. For instance, there is a natural stream in Sadhupul, a village between Solan and Chail, that is said to be a potential site for a lake for recreational activities for tourists, like boating, food stalls, water sport etc. According to the Tourism department, the local people are even willing to give away land for this purpose as they realise that these generate various employment and business opportunities.

- Some of the most popular tourist destinations in Solan, e.g. Garkhal in Kasauli town, suffer greatly due to heavy traffic jams. Alternative routes should be developed.

- The State may attract private players to develop new tourist destinations through PPP mode, by providing incentives and easing barriers to entry.

- The hotels in HP are controlled by the Tourism Department on setting up their tariff structure and on maximum discounts they can offer during off-season time. This regulatory control may be abolished as is the case in Delhi or Haryana. This will give the hotels flexibility to fix tariff and earn profits during both season and off-season months.

- The private web-portals for hotel booking, like Oyo, Make my trip etc. should be regulated. It is observed during the inspections conducted by the Tourism Department that these portals register even those hotels which are not registered by the Tourism Department, hence resulting in loss of revenue to state. These unregistered hotel units illegally avail the domestic power and water connection.

- Construction of an airport will boost tourism to a great extent.

- Focus on setting up new private schools, with good infrastructure and trained teachers, in the district.

- The engineering and medical institutes should accept the nationally conducted JEE and NEET exams for their admission process, to gain popularity at national level.

VI.4. General Recommendations as suggested by various departments

- The research support to Research Institutions, Colleges with Life Science Faculty and NGOs of the district may be availed from the Department of Biotechnology which is implementing Competitive Research and Development Grant Scheme, Star College Scheme and Societal Program for the benefits of Scientists, Teachers, Students, SC/STs and Women.

- According to NSDC District wise Skill Gap Study, skill development opportunities are expected in sectors like construction, tourism, pharmaceuticals, healthcare and communication. The recommended potential skill training areas in these sectors are:
    - Construction: Heavy machine operators, brick-layers, designers, decorators & other service oriented trades
    - Tourism: Guides, adventure sports personnel, trained drivers
    - Pharmaceuticals: Bio-instrumentation, Pharmacists, Process Technicians
    - Healthcare: Physiotherapists, Bio-medical Instrumentation technicians, Lab technicians, sample collection compounders.
    - Communication: Networking, Software testing, Programmers, sales and marketing executives, mobile servicing and repairing.

VI.5. District Plan Action Plan and Monitoring

Table VI.1 presents the proposed short-term plan of actions in the identified domains, and the indicators to measure progress.

Table VI.1: Short term Action Plan and Indicators of Progress

Area	Action Plan	Progress Yardstick	Department	Convergence with existing scheme
Industry and Related	Expedite the implementation of Cluster development programme for pharma sector (CDP-PS) and Pharmaceutical promotion develop Short term scheme (PPDS)	The provision of financial assistance in various phases for creation of identified infrastructure	Ministry of Commerce and Industry; District Industry Centre	CDP-PS, PPDS
	Incentive on installing refurbished or reconditioned Plant & Machinery (P&M), even if imported from other countries	Benefits, especially to the drug manufacturers	Ministry of Commerce and Industry; District Industry Centre	Industrial Development Scheme for HP and Uttarakhand, 2017
	For the pharma industries, the essential components like testing laboratories to conduct tests may also be considered as P&M	Benefits to the drug manufacturers	Ministry of Commerce and Industry; District Industry Centre	Industrial Development Scheme for HP and Uttarakhand, 2017

Table VI.1: Short term Action Plan and Indicators of Progress				
Area	**Action Plan**	**Progress Yardstick**	**Department**	**Convergence with existing scheme**
	Explore production of high-value essential oil or aromatic oil using exotic herbs	Benefits to manufacturers and exporters	District Industry Centre	-
	Legalise the cultivation of cannabis for industrial use	Benefits to manufacturers and exporters	HP Government	-
Horticulture	Popularize the benefits of protected cultivation	More crops, particularly exotic varieties and flowers, brought under protected cultivation	Horticulture Department	National Horticulture Mission; State Mission on Food Processing
	Increase state budget allotted for subsidies towards development of poly-houses	More people getting benefit of subsidy	State government	National Horticulture Mission for North East & Himalayan States (HMNEH)
	Post-harvest management, cold storage and suitable air-conditioned transportation systems / vehicles to be arranged	Increase in production and benefits to producers in transporting perishable horticulture and floriculture items	Horticulture Development Office	Weather based crop insurance scheme (WBCIS)
	Agencies like HPMC to procure and market agricultural produce	Better market realisation for producers	Agriculture Department	National Horticulture Mission
Tourism	Obtaining clearances for setting up a hotel from various departments to be centralized, say, DC Office	Setting up of hotel establishment made simpler.	Tourism Department	EoDB Reform
Skills Development and Human Resources Development	The engineering and medical institutes to accept the nationally conducted JEE and NEET exams for their admission process	More popularity of professional institutes at national level	State Education Department	-
	The research support to Research Institutions, Colleges with Life Science Faculty and NGOs of the district	Benefits to Scientists, Teachers, Students,	Department of Biotechnology	Competitive Research and Development Grant Scheme, Star College

Table VI.1: Short term Action Plan and Indicators of Progress				
Area	**Action Plan**	**Progress Yardstick**	**Department**	**Convergence with existing scheme**
	may be availed from the Department of Biotechnology	SC/STs and Women.		Scheme and Societal Program
Ease of Doing Business	State should address the implementation gaps in establishing the online single-window; conducting land and construction permit reforms, establishing electronic commercial courts, etc.	Doing Business made easier. Increase in number of investors	District Industry Centre	EoDB Reforms
	Obtaining the Essentiality Certificate may be made simpler	Doing Business made easier. Increase in number of investors	Panchayat Samiti, District Industry Centre	EoDB Reforms




APPENDIX 1: Number of registered factories and workers employed

	Number		y-o-y growth, %	
Year	Factory	Workers	Factory	Workers
1999	621	40,246		
2000	719	44,005	15.8	9.3
2001	749	45,097	4.2	2.5
2002	807	47,031	7.7	4.3
2003	821	47,129	1.7	0.2
2004	963	56,807	17.3	20.5
2005	952	74,105	-1.1	30.5
2006	1,139	93,091	19.6	25.6
2007	1,327	1,13,146	16.5	21.5
2008	1,511	1,30,731	13.9	15.5
2009	1,711	1,47,271	13.2	12.7
2010	1,952	1,67,716	14.1	13.9
2011	2,109	1,81,066	8.0	8.0
2012	2,275	1,94,916	7.9	7.6
2013	2,417	2,04,116	6.2	4.7
2014	2,492	2,08,666	3.1	2.2
2015	2,535	2,12,496	1.7	1.8
2016	2,544	214586	0.4	1.0

Source: Statistical manual finance and statistical department of Himachal Pradesh

APPENDIX 2: Persons/Officials we met in Solan and Shimla

S. No.	Name of the Person	Designation	Address	Phone
1	Sh Vinod Kumar	Deputy Commissioner	Mini Secretariat, New Building, Solan	
2	Mr. Vivek Chandel	Additional District Magistrate	Mini Secretariat, New Building, Solan	9418054000
3	Dr. R.N. Shankar	Dy. Director, Agriculture	Mini Secretariat, New Building, Solan	9418769369
4	Mr. Manoj Chauhan	GM District Industries Centre (DIC)	Mini Secretariat, New Building, Solan	9418344337
5	Mr. Jawahar Lal Verma	District Planning Officer	Mini Secretariat, New Building, Solan	9898810781
7	Mr. Dinesh Gupta	A.R.O. Planning	Mini Secretariat, New Building, Solan	9882150235
8	Ms. Nidhi Rawat,	Horticulture Development officer	Mini Secretariat, New Building, Solan	7018471824
9	Dr. B S Guleria	Deputy Director (Horticulture)	Mini Secretariat, New Building, Solan	9418499060
10	Mr. Nitin Gupta	Manager DIC	Mini Secretariat, New Building, Solan	9968197877
11	Mr. Vivek Chauhan	Dy. Director, Tourism	Mini Secretariat, New Building, Solan	7018450500
12	Mr. Pradeep Chauhan	Economic Adviser to HP, Directorate of Economics and Statistics	Directorate of Economics and Statistics, Shimla	9816022449
14	Mr. V Rana,	Dy Director, Department of Economics and Statistics	Directorate of Economics and Statistics, Shimla	
15	Mr. Rajesh Sharma	Director Industries	DIC, Shimla	
16	Mr. Tilak Sharma	Joint Director Industries	DIC, Shimla	7018244299
17	Mr. Subhash Sharma	Faculty	ITI Solan	7018115396
18	Mr. Sanjay Kanwar	Jt. Dir. Industries, Baddi	Baddi	9418060728
19	Mr. Vikram Bindal	State President, Laghu Udyog Bharti	Baddi	9218559555
20	Dr. Rajesh Gupta	State President, Himachal Drugs Manufacturers Association	Baddi	9779021318
21	Mr. Satish Singhal	Chief Advisor, Himachal Drugs Manufacturers Association	Baddi	9872633936
22	Mr. Rajeen Satya	Executive Officer, BBN Industrial Association	Baddi	9216732167