

DISTRICT DEVELOPMENT PLAN

**A PILOT STUDY OF SOLAN DISTRICT OF HIMACHAL
PRADESH, FOR BOOSTING ECONOMIC GROWTH**

Phase II

Report	August
20210805	2021



District Development Plan

A Pilot Study of Solan District of Himachal Pradesh for Boosting Economic Growth

Phase II

August 2021



National Council of Applied Economic Research

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The findings, interpretations, and conclusions expressed are those of the authors and do not necessarily reflect the views of the Governing Body of NCAER.

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Foreword

The Government of India's Department of Promotion of Industry and Internal Trade (DPIIT, originally known as the Department of Industrial Policy and Promotion, or DIPP) set a goal in early 2018 of making India a US\$ 5 trillion economy by 2025. In order to achieve this, a Working Group was constituted under the chairmanship of the former Minister of Commerce and Industry, Shri Suresh Prabhu. One of the key points highlighted by the Working Group for achieving this goal was that economic growth needs to come from the States and districts using a bottom-up approach, and this could be helped by treating the district as the primary unit for planning and policy interventions. It was proposed to prepare strategic plans for the districts centred around their local strengths and economic activities with the objective of achieving an increase of at least 2-3 per cent in their annual growth rates.

The widespread economic disruption caused by COVID-19 throughout 2020 has made it a huge challenge for India to attain the goal of becoming a US\$ 5 trillion economy. This makes it all the more important that attention be focused on promoting district-level growth using a bottom-up approach.

This NCAER study started at the request of DPIIT in 2018 is part of the Working Group initiative in which six pilot districts were selected for preparing District Strategic Plans based on local research and extensive stakeholder consultation. The six districts included Sindhudurg and Ratnagiri in Maharashtra, Varanasi in Uttar Pradesh, Muzaffarpur in Bihar, Visakhapatnam in Andhra Pradesh, and Solan in Himachal Pradesh. This NCAER study covers Sindhudurg, Ratnagiri, and Solan; the other districts are covered by Indian Institute of Management, Lucknow.

The study was carried out in two phases. Phase I included the identification of potential growth areas in the districts, making an initial set of recommendations for these potential areas, and preparing the District Strategic Plans, popularly known as District Development Plans. The goal during Phase II was to implement the proposed recommendations by mentoring and hand-holding the administration and other stakeholders in the district, along with capacity building and promotion of skilling initiatives.

This study entailed several rounds of consultations with stakeholders, including the district administration, government departments, industry associations, entrepreneurs, NGOs, and ultimate beneficiaries like farmers and fishermen. The valuable feedback and inputs from all these stakeholders enabled the NCAER study team to effectively identify the thrust areas in Phase I and to prepare a comprehensive implementation plan in Phase II.

I take this opportunity to thank Shri Suresh Prabhu, PM's Sherpa G20 and G7 Summit and Member of Parliament, Rajya Sabha to initiate this important study and take keen interest through the course of the study. I also thank Smt Rupa Dutta, Principal Economic Adviser; Shri Rajat Sihar and Shri A S Bhal, former Senior Economic Advisers; and Smt Meenaxi Rawat, Economic Adviser at DPIIT, for offering their valuable insights during the course of the study. I

also wish to thank Mr Sandip Ravindra Kote (former Deputy Director, DPIIT) and Mr Brijesh Patel, Assistant Director, DPIIT, for extending their support and cooperation through both phases of the study.

At the district level in Solan, my sincere gratitude goes out to Smt Kritika Kulharu, IAS, Deputy Commissioner, Solan; Shri Zaffar Iqbal, IAS, Additional Deputy Commissioner, Solan; Shri Vinod Kumar, IAS, Former Deputy Commissioner, Solan; Shri Vivek Chandel, Former Additional Deputy Commissioner, Solan; Shri Bhanu Gupta, Assistant Commissioner and Nodal Officer District Development Plan for Solan District, Solan District; Shri Tilak Sharma, Joint Director Industries, DIC Shimla; Dr. Vinod Rana, Economic Adviser, Department of Economic & Statistics, Shimla; Dr. Rajesh Kaushik, Deputy Director, Agriculture Solan; Dr. Rajender Sharma, Deputy Director, Horticulture, Solan; Shri Sanjay Kanwar, Joint Director Industries, Baddi and several other current and former officials of the District Agriculture, Horticulture, Industries and Tourism Departments.

The NCAER team that carried out this study, led by Dr Poonam Munjal, Senior Fellow, included Dr Nijara Deka, Mr Asrar Alam, Mr Rahat Hassan Khan, and Mr K K Lal, along with Dr. Sunil Kumar, our Consultant for the study, who was stationed in Solan during Phase II of the study. The team benefited immensely from the guidance of Senior Advisers at NCAER, Professor D B Gupta, Mr Deepak Sanan, and Mr Somnath Sen. I wish to express my appreciation for the efforts of the entire NCAER team in facilitating this study.

We also look forward to the execution of the key recommendations made in this pilot study through appropriate interventions by the Central and State Governments and the District Administration to boost short-, medium-, and long-term economic growth in the district. I also hope that similar research and action plans can be prepared for other districts in India. As a follow-up, DPIIT should then convene a cross-district learning platform on which district administrators and others can share the lessons of their success and failure and thereby help optimise a district-driven, bottom-up approach to achieving India's goal of becoming a US\$ 5 trillion economy.

August 23, 2021

Dr Poonam Gupta

Director General,
NCAER

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Executive Summary

I. Introduction

The Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry (DPIIT, MoCI) commissioned the “District Development Plan—A Pilot Study of Sindhudurg District of Maharashtra for Boosting Economic Growth”, a study carried out by the National Council of Applied Economic Research (NCAER) in 2018. This study was part of DPIIT’s proposal to prepare strategic plans for districts aimed at boosting their annual growth rates and thereby contributing to accelerated growth of the Indian economy.

In accordance with the DPIIT’s agenda, the objective of Phase I of this study was to prepare a District Strategies Plan or District Development Plan for Solan district, Himachal Pradesh, in close consultation with the administration and relevant stakeholders in the district. The outcome of this study was the identification of the potential areas of growth in the district and a set of recommendations to facilitate fast-track growth in these areas. These recommendations were aimed at achieving easily implementable actions and short-term goals without too many long-term aspirations.

These recommendations are expected to be implemented through the proposed actions in Phase II of the study. This report delineates the actions taken as well as the handholding support offered in the district during Phase II of the study. The key activities undertaken during this phase have been described below.

- **Refine the Sector Strategies**—This included validation of the baseline findings and identification of the growth sectors; consultations with stakeholders in the district and the State; discussions on growth opportunities with key Government agencies for the relevant sectors; discussions with selected investors and entrepreneurs in new or emerging sectors, and analysis of their aspirations; assessment of human resources and adequacy of skills for additional and new investments; and establishment of a district strategic economic development unit along with the appointment of the Project Manager and nodal officers from the district administration.
- **Initial Implementation Actions**—The initial actions for implementation included validation of roadmaps for the selected sectors; consultations with existing and potential investors, including from the Government, public sector and private sector agencies, and NGOs, among others; identification of geographical locations and sites for undertaking relevant growth activities; assessment of capacities of the State/district; and identification of key measures in the targeted areas for overcoming constraints to growth.
- **Handholding Support for Implementation**—This entailed offering hand-holding support to the district economic development unit for implementing key growth strategies,

and reporting on the agreed monitoring indicators with recommendations for course corrections.

Documentation and Communications with Stakeholders—Another important goal of the project is dissemination of the data and findings from Phase II amongst the target groups in the district and the State.

II. Proposed Recommendations for Interventions

The proposed actions for implementation or the interventions are presented in Table 1. The table also lists the likely stakeholders/departments that would be most suitable for executing these interventions and also the manner of implementation of the intervention, primarily through convergence with an existing scheme in the district. The table thus effectively answers the following key questions: “What should be the interventions?”; “Who should implement them?”; and “How should these be implemented?”

Table 1: Proposed Interventions in the District

Area	WHAT should be the interventions	WHO can implement?	HOW can these be implemented?
Industry and Related	Incentive on installing refurbished or reconditioned Plant & Machinery (P&M), even if imported from other Countries	DIC, Solan, State Government and Ministry of Micro, Small and Medium Enterprises, GOI	New Industrial Policy, 2019; Scheme for Enabling manufacturing sector to be competitive through Quality Management Standards and Quality technology tools, Marketing assistance & technology upgradation scheme in MSMEs, Technology and quality upgradation support to MSMEs and Promotion of ICT in Indian manufacturing sector under National Manufacturing Competitiveness Programme (NMCP);
	For the pharma industries, the essential components like testing laboratories to conduct tests may also be considered as P&M	DIC, Solan, State Government and Ministry of Micro, Small and Medium Enterprises, GOI	New Industrial Policy, 2019;
	Explore production of high- value essential oil or aromatic oil	State Government, Department of Agriculture;	Industrial Development Scheme (GOI) for Himachal Pradesh and Uttarakhand, 2017 .

Area	WHAT should be the interventions	WHO can implement?	HOW can these be implemented?
	using exotic herbs	Ministry of AYUSH, GOI	<p>Mission for Integrated Development of Horticulture (MIDH) under National Horticulture Mission for North East & Himalayan States (HMNEH) ;</p> <p>Promotion of Herbal Cultivation in the Country: Ministry of AYUSH, Government of India is implementing Centrally Sponsored Scheme of National AYUSH Mission (NAM). Under 'Medicinal Plants' component of the NAM scheme supporting market driven cultivation of prioritized medicinal plants in identified cluster/zones with in selected districts of States and implemented in a mission mode.</p>
	Legalise the cultivation of cannabis for industrial use	Implemented - Realising the economic benefits of cannabis cultivation and after two decades of debate, the state government finally decided to allow controlled cultivation of cannabis for industrial and medicinal use. This was announced by the Chief Minister in the budget session of March 2021.	
	Promotion of rural industrialization	Under implementation - State Mission for Food Processing - 2017, promoted by Department of Industries is working towards achieving this objective	
	Resolve the issue of exorbitant transport cost charged by the Truck Union	Implemented - Transport Subsidy Eligible Industrial Enterprises would be incentivized to compensate high cost of transportation within the State, irrespective of fact that source of purchase or destination of sale is within or outside the State Enterprises will be reimbursed actual expenditure incurred on transportation subject to maximum of Rs.10 lakhs per annum for MSMEs and Rs. 20 lakh per annum for large units, for a period of 3 years	
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.	Implemented - According to a circular released in July, 2019, the Revenue Department has issued a notification regarding HP Tenancy & Land Reforms (Amendment) Rules, 2019 on 25 th June, 2019, according to which the format of the EC has been substituted and now only a Preliminary Project Report is required at the time of issuance of EC, making the process much simpler.	

Area	WHAT should be the interventions	WHO can implement?	HOW can these be implemented?
Horticulture	Increase budget allotted for subsidies towards development of poly-houses	Union Government, Ministry of Agriculture and Farmers Welfare	Mission for Integrated Development of Horticulture (MIDH) under National Horticulture Mission for North East & Himalayan States (HMNEH) National Horticulture Mission for North East & Himalayan States (HMNEH), Weather based crop insurance scheme (WBCIS),
	Post-harvest management, cold storage and suitable air-conditioned transportation systems / vehicles to be arranged	District Horticulture department; Department of Agriculture & Cooperation, Ministry of Agriculture, GOI; National Horticulture Board, Ministry of Agriculture & Farmers' Welfare, GOI.	Integrated Post Harvest Management Components under Mission for Integrated Development in Horticulture (MIDH)
	Agencies like HPMC to procure and market agricultural produce	District Horticulture department and State Horticulture Department; National Horticulture Board (NHB), Ministry of Agriculture & Farmers Welfare, GOI.	Market Information Service for Horticulture Crops Scheme of NHB
Tourism	Obtaining clearances for setting up a hotel from various departments to be centralized, say, DC Office or made simpler	Implemented - According to a circular released in July, 2019 the Revenue Department has issued a notification regarding HP Tenancy & Land Reforms (Amendment) Rules, 2019 on 25 th June, 2019, according to which the format of the EC has been substituted and now only a Preliminary Project Report is required at the time of issuance of EC, making the process much simpler.	
Skills Development and Human	The engineering and medical institutes to accept the nationally conducted JEE and NEET exams for their	National Testing Agency	State Education Department; Individual institute should promote such initiative and National Testing Agency can initiate the process.

Area	WHAT should be the interventions	WHO can implement?	HOW can these be implemented?
Resources Development	admission process		
	Relax the mandate to employ a minimum of 80 percent labourers from within the state	Implemented - In this regard, the state govt has incentivised the employment of Bonafide Himachalis by giving an incentive of Rs.1000 per month per additional employment generated over and above 50 Bonafide Himachalis for ten years from the date of production. In addition to above, Bonafide Himachalis employed by the industrial enterprises would be eligible for skill development allowance	
	Removal of mandate of obtaining an appraisal of a scheduled bank before sanction of an assistance	Implemented - the said condition for self-financing industries has been relaxed to appraisal from HIMCON (Himachal Consultancy Organization) instead of only from Scheduled Bank or Financial Institution	

III. Initial Implementation Actions

One of the first initial actions towards implementation of the proposed sector strategies was to collect more details of the sector and also provide reasonable justification of proposing them. These details were obtained either from the secondary data, to the extent available, or through the relevant stakeholders in the districts. Besides, the initial implementations also included the review of the best practices around the recommended areas in other states of India. We have found that some of the recommendations, in terms of activities, which are proposed for the district, are being successfully carried out in other states.

i. Legalisation of cannabis cultivation

The abundant availability of extremely high-quality cannabis hemp in Himachal Pradesh has high revenue generating potential, including returns from exports. With such high export demand, legalisation of cannabis cultivation is expected to give a boost to the industrial economy of the state. Given that Solan contributes to more than half of the state GSDP and that Baddi is Asia’s largest pharmaceutical hub, the economic returns to the district is bound to be significant. We had, therefore, recommended in both Phase I and Phase II of the study that the cultivation of cannabis should be legalised in Himachal Pradesh, exclusively for industrial and medicinal use, as in the neighbouring state of Uttarakhand.

Realising the economic benefits of cannabis cultivation and after two decades of debate, the state government finally decided to allow controlled cultivation of cannabis for industrial and

medicinal use, as announced by the Chief Minister in the budget session of March 2021. With this, the state becomes the third state in the country to do so, after Uttarakhand and Madhya Pradesh. The decision came primarily to make up for the economic loss caused by the unemployment and limited resources of income, amidst pandemic and subsequent lockdowns.

ii. Increase state budget allotted for subsidies towards development of poly-houses

There is huge demand for poly-houses in Solan district and although there is huge subsidy given but that is not sufficient to meet the demand. In the Phase I of the study, NCAER's recommendations for Solan was to increase the budgetary allocation, by at least Rs. 50 crore, towards the subsidy provided for erection/installation of poly-house for protected cultivation in the district (See Letter from Deputy Director, Department of Agriculture in Annex II). According to the Agriculture Department of the district, there is a huge demand for poly-houses and although state government gives huge subsidy, which increased from earlier 50 percent to now 85 percent of the cost, the total budgetary allocation is still not sufficient to meet the huge demand.

iii. Aromatic crops to be used in the production of essential oils

Aromatic plants are critical to Himachal Pradesh economy. Currently, to boost their incomes, some farmers across the state switch to aromatic plant cultivation due to uncertain weather conditions. Since 2017, close to 700 hectare of land has been brought under the cultivation of aromatic plants such as wild marigold in Himachal Pradesh¹. The production of marigold in the country is not enough to meet the demand and hence India imports the flower from Australia, France, and Brazil. The success of these farmers has since attracted many others to join, Himachal Pradesh produced 7.6 tonnes of essential oils from wild marigold alone. Around the world also, aromatic crops are widely cultivated due to its high-revenue earning essential oil which is utilized in agrochemical, food, flavoring, perfumery and pharmaceutical industry. The global essential oils market demand was 226.9 thousand tons in 2018 and projected to expand at a CAGR of 8.6% from 2019 to 2025.'

iv. Incentives to the Industry

We had suggested various interventions for the industrial sector. Some of these have been addressed in the New Industrial Policy, 2019 while some other are under review or are not addressed at all. These are:

- For the pharma industries, the essential components like testing laboratories to conduct tests may also be considered as P&M;

¹ <https://mediaindia.eu/business/himachal-farmers-switch-to-aromatic-plants/>

- Easing the process of obtaining Essentiality Certificate;
- Relax the mandate to employ a minimum of 80 percent labourers from within the state;
- Removal of mandate of obtaining an appraisal of a scheduled bank before sanction of an assistance;
- Resolve the issue of exorbitant transport cost charged by the Truck Union;
- Promotion of rural industrialization.

v. Development of Tourism in the district

A number of initiatives have been taken, especially in Wagnaghat, Kandaghat and Chail Kufri corridor. According to Sh Hem Chand Kashyap, ARO Tourism Deptt. Shimla (in a meeting on 25th Nov, 2019), wayside amenities are under operation in Barog, Solan, Bhararighat and Sadhupul. Besides, following interventions are planned for expansion of tourism in Wagnaghat, Kandaghat and Chail Kufri corridor, some of which were also proposed in the Phase I of this study:

- Amusement park to be developed at Chail to attract the tourism on the analogy of adventure park of Kufri.;
- Some sitting and viewpoints like gazebo places can be developed on the spare land where there are beautiful sight seeing places;
- Adventure Park proposed to be developed at Sadhupul adjoining the Sadhupul Lake.
- Development of road from Kandaghat to Khurbi Devi temple. This place can be developed as the one with historical and religious importance.
- Beautification of railway station at Kandaghat

vi. Handholding Support for Implementation

This section briefly presents the important activities undertaken towards providing the handholding support to the district. For this, we have been in regular contact with the District Administration Office, especially Mr. Vivek Chandel, former ADM, Solan, who sent an official communication to all the stakeholders/departments to suggest the implementation plan for the proposed recommendations, which NCEAR could facilitate or expedite to achieve the required targets. *A letter from Mr. Tilak Sharma, Joint Director, Industries, DIC, Shimla, acknowledging the efforts of NCAER in getting some of the recommendations implemented is attached in Annex 1.* This letter acknowledges our handholding activities in the district.

The relevant stakeholders and departments met for the consultation were Agriculture Department; Horticulture Department, Tourism Department, District Industries Centre, Industry Associations at Baddi, Registrars of Private Universities.

Mr. Bhanu Gupta, Assistant Commissioner, Solan district was appointed as the nodal officer for the study.

Besides, there was a plan to organize some training programmes, especially on aromatic crops. The principal investigator of essential oil, Dr. Rakesh Rana of Council of Scientific and Industrial Research - Institute of Himalayan Bioresource Technology, Palampur (CSIR-IHBT) had agreed to hold the training session on 18th March 2020. However, due to the Government of India advisory not to organize any public gathering as a precaution to avoid COVID-19, the programme was cancelled.

Letters of request have been sent to DPIIT for their possible interventions in some of our recommendations, like promotion of cannabis cultivation and budget enhancement towards provision of subsidy for constructing polyhouses.

vii. Documentation and Communications

The District Administration and the key government departments of the state, like Agriculture, Horticulture, Floriculture, Industry and Tourism have been consulted on a regular basis. Besides, the industrial associations of key industrial areas have also been consulted which helped the team in identifying the thrust areas of growth, main constraints and industry concerns in the Phase I. Further interactions in Phase II helped the team in realising how the state efforts, along with NCAER efforts, have led to implementation of key policy measures. The activities have been well documented and are discussed in detail in this report. The district stakeholders have always been communicated with the developments. The Phase I report was widely circulated among the key stakeholders. Similarly, Phase II report will also be shared with them.

I. Introduction

I.1. Context of the study

The National Council of Applied Economic Research (NCAER) completed Phase I of the study titled, “District Development Plan—A Pilot Study of Solan District of Himachal Pradesh for Boosting Economic Growth”, commissioned by the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry (DPIIT, MoCI).

The objective of Phase I of the study was to prepare a District Strategies Plan, in close consultation with the district administration and relevant stakeholders, for three pilot districts, including Ratnagiri and Sindhudurg in Maharashtra, and Solan in Himachal Pradesh. The plan is expected to provide inputs for action-oriented policy research at the district level to enable the district to achieve an additional economic growth of 2-3 per cent by 2025.

The outcome of Phase I of the study comprised a set of recommendations proposed for the district to facilitate its fast-track growth. These recommendations have been proposed for implementation in the key potential areas of growth in the districts. The recommendations are aimed at achieving quick do-able actions and near-term goals without too many long-term aspirations.

These recommendations are expected to be implemented through the proposed actions in Phase II of the study. This report delineates the actions taken as well as the handholding support offered during the initial phase of the study in the Solan district of Himachal Pradesh.

I.2. Objectives

As laid out in the original Terms of Reference (ToRs), the overall aim of the study is to develop district strategies for accelerating growth in the district by about 2-3 per cent. The original ToR envisaged the following activities as part of the overall exercise:

1. Preparation of a strategy with the objective of accelerating growth in the district by 2-3 per cent, which has been completed during Phase I.
2. Collaboration with the district administration, State governments, and Ministries/Departments of the Central Government to develop a strategy for growth, which has also been done during Phase I.

3. Mentoring and handholding of the district during implementation of the proposed strategy—this is part of Phase II and involves refining sector strategies and identification of the implementation actions.
4. Monitoring and reporting progress of the district—this is also part of Phase II and includes handholding support offered by the district economic development unit and monitoring of progress on the basis of the stipulated indicators.

Broadly, the objective of Phase II is to implement the recommendations proposed in Phase I of the study in conjunction with the administration, and the context of the hand-holding, and monitoring of the progress achieved.

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. The NCAER Team also carried out field visits, and held meetings and consultations with stakeholders in the State (Himachal Pradesh, especially the Economic and Statistics Dept., District Industries Centre, etc.) and in the district. The officials with whom there were interactions included the District Magistrate, Additional District Magistrate and other key officers in the district administration (departments for agriculture and horticulture, industries, tourism, etc.).

Since Phase II involved the implementation of the recommendations, the key activities were primarily limited to handholding the district administration in achieving targeted growth rate. The key activities were as follows:

Refining the Sector Strategies

- i. Validation of baseline findings and identified growth sectors, with district administration and other stakeholders
- ii. Consultations with stakeholders in the district and state in the identified sectors for detailed action plans
- iii. Discussions with key Govt. agencies (from relevant sectors) on growth opportunities, and unblocking regulatory/policy and infrastructure constraints/
- iv. Identification of key sources of public and private financing, discussions with selected investors / entrepreneurs in new / emerging sectors and their key aspirations
- v. Human resources and skills adequacy assessment for additional / new investments
- vi. Establishment of the district Strategic economic development unit with Nodal officers from District administration and Project Manager.

Initial Implementation Actions

- i. Validation of roadmaps for identified sectors with sector experts and potential sponsors
- ii. Consultations with existing and potential investors (Govt. and public sector agencies, private sector, NGOs, etc.)
- iii. Identification of geographical locations/ sites/ for promotion of relevant growth activities
- iv. Assessment of capacities of state, private, informal sector and households.
- v. Measures identified for addressing constraints to identified growth sectors: (a) Policy/regulation, (b) Infrastructure and logistics, (c) Skills and capacities, (d) Markets and competitive strategies.
- vi. Alignment of stakeholders for implementation of accelerated economic development strategies

Handholding Support for Implementation

- i. Supporting Implementation of key growth sector strategies by providing hand-holding support to district economic development unit
- ii. Reporting on agreed monitoring indicators with recommendations for course-corrections

Documentation and Communications with Stakeholders

The project also entails dissemination of the data and emerging findings amongst target groups in the district and State.

II. Refining the sector Strategies

This Chapter summarises the recommendations and strategies for thrust sectors identified in Phase I. In Phase II, these sector strategies were further refined by validating with the district administration and through extensive field visits conducted at different parts of the district. Consultations with stakeholders for each sector were also carried out. This chapter details these field visits as well.

II.1. Sector Strategies

The outcome of the Phase I of the study were a set of recommendations proposed for the district, to enable it to grow on a fast-track. These recommendations were proposed for the key potential areas of growth in the districts. Without being too aspirational, the recommendations were proposed for quick do-able actions and to achieve near-term goals.

Hence, from the list of many recommendations proposed in Phase I, only short-term recommendations, which looked likely achievable within a year, were proposed to be implemented in the Phase II.

In the Phase II of the study, these short-term recommendations were required to be implemented through the existing schemes and programmes being implemented in the state/district. The Phase I report, which presented the baseline findings and the proposed recommendations, was circulated across all the departments and industry representatives. All of the findings and the recommendations proposed were validated by them.

Another stakeholder consultation meeting was held on 15th of October, 2020 to discuss the sector strategies and also on new emerging areas.

Table (II.1) presents the proposed recommendations, all of which are identified as short-term plan of actions in the identified domains. The table effectively answers the following key questions: “What should be the interventions?”; “Who should implement them?”; and “How should these be implemented?”

Table II.1 Proposed recommendations and Convergence with existing schemes

Area	WHAT should be the interventions	WHO can implement?	HOW Can these be implemented?
Industry and Related	Incentive on installing refurbished or reconditioned Plant & Machinery (P&M), even if imported from other Countries	DIC, Solan, State Government and Ministry of Micro, Small and Medium Enterprises, GOI	New Industrial Policy, 2019; Scheme for Enabling manufacturing sector to be competitive through Quality Management Standards and Quality technology tools, Marketing assistance & technology upgradation scheme in MSMEs, Technology and quality upgradation support to MSMEs and Promotion of ICT in Indian manufacturing sector under National Manufacturing Competitiveness Programme (NMCP);
	For the pharma industries, the essential components like testing laboratories to conduct tests may also be considered as P&M	DIC, Solan, State Government and Ministry of Micro, Small and Medium Enterprises, GOI	New Industrial Policy, 2019;
	Explore production of high- value essential oil or aromatic oil using exotic herbs	State Government, Department of Agriculture; Ministry of AYUSH, GOI	Industrial Development Scheme (GOI) for Himachal Pradesh and Uttarakhand, 2017 . Mission for Integrated Development of Horticulture (MIDH) under National Horticulture Mission for North East & Himalayan States (HMNEH) ; Promotion of Herbal Cultivation in the Country: Ministry of AYUSH, Government of India is implementing Centrally Sponsored Scheme of National AYUSH Mission (NAM). Under ‘Medicinal Plants’ component of the NAM scheme supporting market driven cultivation of prioritized medicinal plants in identified cluster/zones with in selected

Area	WHAT should be the interventions	WHO can implement?	HOW Can these be implemented?
			districts of States and implemented in a mission mode.
	Legalise the cultivation of cannabis for industrial use	Implemented - Realising the economic benefits of cannabis cultivation and after two decades of debate, the state government finally decided to allow controlled cultivation of cannabis for industrial and medicinal use. This was announced by the Chief Minister in the budget session of March 2021.\	
	Promotion of rural industrialization	Under implementation - State Mission for Food Processing - 2017, promoted by Department of Industries is working towards achieving this objective	
	Resolve the issue of exorbitant transport cost charged by the Truck Union	Implemented - Transport Subsidy Eligible Industrial Enterprises would be incentivized to compensate high cost of transportation within the State, irrespective of fact that source of purchase or destination of sale is within or outside the State Enterprises will be reimbursed actual expenditure incurred on transportation subject to maximum of Rs.10 lakhs per annum for MSMEs and Rs. 20 lakh per annum for large units, for a period of 3 years	
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.	Implemented - According to a circular released in July, 2019, the Revenue Department has issued a notification regarding HP Tenancy & Land Reforms (Amendment) Rules, 2019 on 25 th June, 2019, according to which the format of the EC has been substituted and now only a Preliminary Project Report is required at the time of issuance of EC, making the process much simpler.	
Horticulture	Increase budget allotted for subsidies towards development of poly-houses	Union Government, Ministry of Agriculture and Farmers Welfare	Mission for Integrated Development of Horticulture (MIDH) under National Horticulture Mission for North East & Himalayan States (HMNEH) National Horticulture Mission for North East & Himalayan States (HMNEH), Weather based crop insurance scheme (WBCIS),

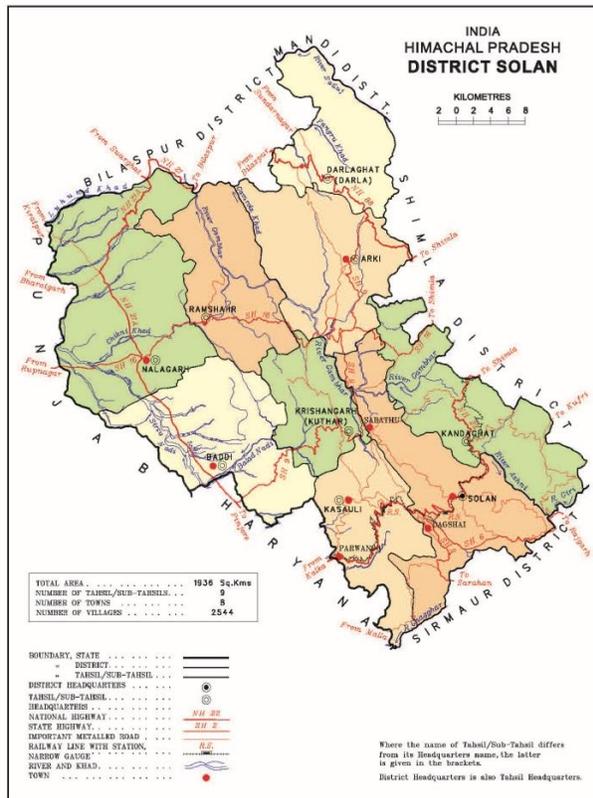
Area	WHAT should be the interventions	WHO can implement?	HOW Can these be implemented?
	Post-harvest management, cold storage and suitable air-conditioned transportation systems / vehicles to be arranged	District Horticulture department; Department of Agriculture & Cooperation, Ministry of Agriculture, GOI; National Horticulture Board, Ministry of Agriculture & farmers Welfare, GOI.	Integrated Post Harvest Management Components under Mission for Integrated Development in Horticulture (MIDH)
	Agencies like HPMC to procure and market agricultural produce	District Horticulture department and State Horticulture Department; National Horticulture Board (NHB), Ministry of Agriculture & farmers Welfare, GOI.	Market Information Service for Horticulture Crops Scheme of NHB
Tourism	Obtaining clearances for setting up a hotel from various departments to be centralized, say, DC Office or made simpler	Implemented - According to a circular released in July, 2019, the Revenue Department has issued a notification regarding HP Tenancy & Land Reforms (Amendment) Rules, 2019 on 25 th June, 2019, according to which the format of the EC has been substituted and now only a Preliminary Project Report is required at the time of issuance of EC, making the process much simpler.	
Skills Development and Human Resources Development	The engineering and medical institutes to accept the nationally conducted JEE and NEET exams for their admission process	National Testing Agency	State Education Department; Individual institute should promote such initiative and National Testing Agency can initiate the process.
	Relax the mandate to employ a minimum of 80 percent labourers from within the state	Implemented - In this regard, the state govt has incentivised the employment of Bonafide Himachalis by giving an incentive of Rs.1000 per month per additional employment generated over and above 50 Bonafide Himachalis for ten years from the date of production. In addition to above, Bonafide Himachalis employed by the industrial enterprises would be eligible for skill development allowance	
	Removal of mandate of obtaining an appraisal of a scheduled bank before sanction of an assistance	Implemented - the said condition for self-financing industries has been relaxed to appraisal from HIMCON (Himachal Consultancy Organization) instead of only from Scheduled Bank or Financial Institution	

II.2. Field Visits in Solan

Solan district has four sub-division and seven Tehsils. Tehsils are Solan, Kandaghat, Kasauli, Nalagarh, Arki, Baddi and Ramshehar. 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 Project Manager appointed for the study conducted various field visits, interacting with a number of sector stakeholders and district administration officials (Table II.2). The Nodal officer

Figure 1: Map of Solan District



appointed for this study, Mr. Bhanu Gupta, also guided the Project Manager in interacting with different people in Solan district headquarter. Besides, office of Directorate of Economics & Statistics, Joint Director, Industries, DIC, Shimla were visited for interaction and discussion. The field consultations revealed the following observations for the major thrust sectors of the district.

Agriculture, horticulture and floriculture are practised across the district. The district is famous for producing off-season vegetables and exotic fruits like kiwi, apricot, plum and exotic vegetables like asparagus, lettuce, broccoli, coloured capsicum and zucchini among vegetables. These are cultivated particularly in Sproun valley in Solan district.

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.

Table II.2: Concerned Department and People Consulted during Phase II

Department	Persons consulted
Industry and Related	Mr. Vivek Chandel Additional District Magistrate, Solan District Industries Centre (DIC): Mr. Rajesh Sharma, Director, Industries, DIC, Shimla Mr. Tilak Sharma, Joint Director, Industries, DIC, Shimla
Ease of Doing Business	Mr. Sanjay Kanwar Joint Director, Industries, DIC, Baddi, Solan Mrs. Deepika Khatri, Dy. Director Industries, Shimla. Dr. Rajesh Gupta State President, Himachal Drugs. Mr. Rajeen Satya Executive Officer, BBN Industrial Association. Mr. Satish Singhal Chief Advisor, Himachal Drugs
Horticulture	Dr. Prakash Chand Saini Deputy Director, Agriculture, Solan Dr. B S Guleria, Deputy Director (Horticulture), Solan. Ms. Nidhi Rawat, Horticulture Development officer Solan
Tourism	Mr. Vivek Chauhan, Deputy Director, Tourism Deptt, Solan. Mr. Hem Chand Kashyap, ARO Tourism Deptt. Shimla Sh. Mohinder Singh Sr. Asst. Tourism Solan
Skills Development and Human Resources Development	Prof. V.K.Vats, Registrar, Maharaja Agrasen University, Bahra University, Solan. Sh. Vineet Kumar, Registrar, Bahra University, Solan. Sh. Subash Sharma Instructor, Govt. ITI, Solan Dr. Sunil Puri Registrar Shoolini University

*Note: *We met these people during the Phase II period, but we were continuously in touch with those whom we met during our Phase I field visits*

The productivity of vegetables owes greatly to the practice of protected cultivation in Solan district. The protected cultivation is a technique of growing crops under controlled microclimate. It is capital intensive activity and the government provides huge subsidy for establishing greenhouses. The polyhouses are common in Kandaghat, Solan and Dharmapur blocks of Solan district.

However, the interaction with the Deputy Director of the district Agriculture Department revealed that while the government provides subsidy to the extent of 85 percent on setting up polyhouses for protected cultivation, but due to heavy demand, the budget allocation towards the grant of subsidy is not enough. Also, the district has abundant production of wild cannabis, which can fetch huge monetary benefits to the district, owing to its huge demand in international market and also its potential use for industrial and medicinal purposes. The locations with large cultivation of cannabis are Kandaghat, Chail and Solan.

With regard to industry, the district is largely driven by its industrial activity. Almost 80 percent of the district economy is on account of industry. 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. Notably, Solan contributes almost half to the state industrial GDDP. There are three main industrial hubs in the districts. These are Industrial Estate, Parwanoo; Industrial Estate and electronic complex, Chambaghat, Solan; and 35-km-long industrial corridor named Baddi-Barotiwala-Nalagarh, or BBN, for official purposes.

The visits to BBN industrial area revealed the industrial associations' demands for the betterment of the industry which had thrived after major tax incentives were provided for a period of 10 years to the industry, in 2003. Now that those incentives are no longer there, the industries expect some benefits so that those which have had huge fixed investment in the area, do not suffer losses. Meanwhile, the Himachal Pradesh Industrial Investment Policy, 2019, was recently released, which addresses some of the concerns of the industries through certain modifications in previous schemes. Some of the other concerns are still under consideration. These modifications are likely to give a boost to the existing industries and also attract new investors to the state. The expected benefits and the modifications in the previous schemes are discussed in detail in the section on "The Himachal Pradesh Industrial Investment Policy, 2019", later in this chapter.

Within services sector, two sub-sectors are potential ones for overall growth. These are Tourism and Education. Some of the famous tourist destinations are Wagnaghat, Kandaghat and Chail Kufri corridor; Barog, Solan, Bhararighat and Sadhupul. For the development of tourism destinations, a number of initiatives have been taken, especially in Wagnaghat, Kandaghat and Chail Kufri corridor. These initiatives are discussed in Section III.5 of this report.

The district is also becoming a hub for education, particularly higher education. This has helped the district in generating employment and also has made skilled labour available for the flourishing industries in the district. The field visits included the one to the famous Shoolini University, India's first and highest ranked private university in Bio-technology and the first university in the country to offer research programme at undergraduate level.

One of our recommendations for Education sector was to accept the nationally conducted JEE and NEET exams for their admission process. However, meeting with Dr. Sunil Puri, the Registrar of Shoolini University, Solan, revealed that they have never conducted any entrance exam in any stream, although they consider the merits of JEEs and NEETs and all other exams conducted at State level by HPU and Technical University HP in their admissions.

According to Dr. Puri, for the upliftment of standards of education in the district, the government should provide basic amenities like road, transportation, and electricity. It should also provide soft loans to private universities so that they can provide best of the facilities to their students.

During the visit to Maharaja Agrasen University, Baddi, District, Solan, Himachal Pradesh, the Project Manager of the study met with Prof. V.K. Vats, Registrar. Prof Vats asserted that since the students are not aware about the exams like JEE, NEET, they do not conduct such exams. Similar inputs were received from Mr. Vineet Kumar, Registrar, Bahra University, Wagnaghat, Solan. The following sections briefly describes the different schemes under which the proposed recommendations may be implemented.

National Horticulture Mission for North East & Himalayan States (HMNEH),

About the scheme

HMNEH is a part of Mission for Integrated Development of Horticulture (MIDH) scheme, being implemented for overall development of Horticulture in North East (NE) and Himalayan states. The mission covers all NE States including Sikkim and three Himalayan states of Jammu & Kashmir, Himachal Pradesh and Uttarakhand. The mission addresses entire spectrum of horticulture from production to consumption through backward and forward linkages.

The Mission aims to promote holistic growth of horticulture sector covering vegetables, fruits, flowers, spices, roots & tubers, cashewnut, mushroom and aromatic plants. This is a centrally sponsored scheme with 100 percent assistance from Government of India.

Under MIDH, Government of India (GOI) contributes 60 percent of its total outlay for developmental programmes in all the states except states in North East and Himalayas and the remaining 40 percent share is contributed by State Governments. In the case of North Eastern States and Himalayan States, including Himachal Pradesh, GOI contributes 90 percent and only 10 percent is contributed by state governments. In the special cases of National Horticulture Board (NHB), Coconut Development Board (CDB), Central Institute for Horticulture (CIH),

Nagaland and the National Level Agencies (NLA), GOI contributes 100 percent. The mission provides this assistance for the construction of green houses, shade net houses, mulching, plastic tunnels, anti-bird nets etc. It is for this reason that we have converged our recommendation on protected cultivation under this scheme.

Issues in implementation

For protected cultivation, the central government provides full assistance to the state under HMNEH scheme so that the state government is able to provide the subsidy to the extent of 85 percent to the beneficiaries. While the subsidy is huge and this has helped cover about 31.8 hectare of area under protected cultivation but our field interaction found that there is a lot of demand for polyhouses because of their immense benefits, and if the assistance is increased, another 30 hectare of area can be brought under protected cultivation.

This scheme also has a provision of providing cold storage facilities to the farmers so that the perishable vegetables, fruits and flowers can be stored for longer time and the heavy demand from other states as well as from processing units is easily met. But, as of now, these facilities are not enough and there is more demand.

The Himachal Pradesh Industrial Investment Policy, 2019

About the scheme

For the development of industrial sector in the state, several industrial policies have been notified and revised in the past. The incentives to industries were notified initially in 1971, which was revised in 1980, 1984, 1991, 1996, 1999 and 2004. In 2004, Special Industrial Package of incentives was implemented, as a result of which many large and medium scale industries were set up in the district, particularly in the pharmaceuticals sector. The BBN area, which flourished due to this scheme, brought Solan to the world map by being Asia's largest pharmaceutical hub.

This scheme saw some revisions in 2015 and 2017, under which the major incentive of income and excise tax holiday of 2004 scheme was withdrawn. As per our interaction with the heads of the industrial associations in the BBN area, the industries have been proposing several modifications in these revised schemes so that they do not incur losses. Recently, the Himachal Pradesh Industrial Investment Policy, 2019” and “Rules Regarding Grant of Incentives, Concessions and Facilities for Investment Promotion in Himachal Pradesh-2019” were released on 16th August, 2019.

Some of our recommended modifications have been addressed in this policy and some are under review. All of these are discussed below. The Joint Director, Industries, DIC, Shimla, acknowledges the role of this study and NCAER efforts in framing up this New Industrial Policy-2019.

Issues in the scheme

- There is a mandate of employing a minimum of 80 percent of total labour from within the state, which is applicable to all industrial units of the state. Since the industries require specific skills, it is not possible to stick to this mandate. Eventually either the mandate is not being followed or some industries are imparting industrial skills to fresh entrants to the labour force, working as trainees, and then they are absorbed for the regular positions.
- There is a mandate in the scheme that the industries have to necessarily borrow from a bank or a financial institution to avail the benefit of the scheme. Many industries prefer NBFCs over Banks and other FIs, due to easy accessibility and less paper-work.
- Some of the industrial plots are allotted even though proper infrastructure is not in place.
- The scheme does not provide any incentive on installing refurbished or reconditioned Plant & Machinery (P&M), even if imported from other countries, while this incentive was available in the previous industrial development scheme.
- 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 raw material stage to finished goods stage within the unit; heating/ventilating/air conditioning systems; and specified Blister and Strip packaging machines

III. Initial Implementation Actions

One of the first initial actions towards implementation of the proposed sector strategies was to collect more details of the sector and also provide reasonable justification of proposing them. These details were obtained either from the secondary data, to the extent available, or through the relevant stakeholders in the districts. Besides, the initial implementations also included the review of the best practices around the recommended areas in other states of India. We have found that some of the recommendations, in terms of activities, which are proposed for the district, are being successfully carried out in other states.

Each of the proposed sector strategies with all these details are described in this chapter.

III.1. Legalisation of cannabis cultivation

The abundant availability of extremely high-quality cannabis hemp in Himachal Pradesh has high revenue generating potential, including returns from exports. Some of the countries like Canada, Israel and Malaysia have already approached the state and shown great interest in their cannabis extract for use in pharma industry. With such high export demand, legalisation of cannabis cultivation is expected to give a huge boost to the industrial economy of the state. Given that Solan contributes more than half of the state GSDP and that Baddi is Asia's largest pharmaceutical hub, the economic returns to the district is bound to be significant.

In the Phase I, one of our recommendations for Solan was to explore the opportunities and also consider legalising the controlled cultivation of cannabis in the state, which grows wild in the state in abundance. The neighbouring state, Uttarakhand, was the first Indian state to legalise the cultivation of hemp crop, purely for industrial purposes. This was followed by the central state of Madhya Pradesh and Manipur is also considering the same. Cannabis cultivation 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.

The state had been contemplating to legalise the cannabis cultivation for over two decades but could not do so owing to the concerns of drug trafficking. However, the growers kept pressing the government to legalise and promote cannabis and poppy cultivation to give an impetus to their income. It is no secret that, in any case, in many parts of the state, cannabis is traded illegally. In particular, Malana village in Kullu district is famous for its superior quality cannabis and the trade of which has made villages cash rich. A number of international tourists flood in

the village for its cannabis produce. The village is considered the centre of recreation drug tourism.

Realising the economic benefits of cannabis cultivation, the state government finally decided to allow controlled cultivation of cannabis for industrial and medicinal use, as announced by the Chief Minister in the budget session of March 2021. With this, the state becomes the third state in the country to do so, after Uttarakhand and Madhya Pradesh. The decision came primarily to make up for the economic loss caused by the unemployment and limited resources of income, amidst pandemic and subsequent lockdowns.

The tracking parameters of monitoring the progress of this intervention are the following:

- State gets orders from international market
- Benefits to cannabis growers by way of increase in income
- Demand from domestic pharmaceutical industries
- Demand from cosmetic manufacturing industries

Since this is a niche area, which is recommended to be developed in the district, baseline information is not there.

III.2. Increase state budget allotted for subsidies towards development of poly-houses

There is huge demand for polyhouses in Solan district and although there is huge subsidy given but that is not sufficient to meet the demand. In the Phase I of the study, NCAER's recommendations for Solan was to increase the budgetary allocation, by at least Rs. 50 crore, towards the subsidy provided for erection/installation of polyhouse for protected cultivation in the district (See Letter from Deputy Director, Department of Agriculture in Annex II).

According to the Agriculture Department of the district, there is a huge demand for polyhouses and although state government gives huge subsidy, which increased from earlier 50 percent to now 85 percent of the cost, the total budgetary allocation is still not sufficient to meet the huge demand.

The farmers who do not adopt protected cultivation are able to grow only one or two seasonal vegetable crops while those, who adopt, grow three or more crops in a year, thereby increasing their income significantly. Besides, the literature research suggests that protected cultivation not

only increases the productivity of crops but also improves the quality of crops, especially of flowers and exotic vegetables.

Financial Implication of Protected cultivation of vegetables

The Krishi Vigyan Kendra, Kandaghat, Solan district in Himachal Pradesh aims to provide "Hands - on training" on fruit, vegetable and flower nursery production and managements, production of potted plants, orchard management practices, canopy management, and protected cultivation of horticulture crops etc. to the farmers. One of their many success stories is the adoption of Protected Cultivation in Solan district.

An extract from their research shows the economic analysis of the adoption of protected cultivation, presented as part of their experiment to compare the profit earned by a farmer in growing different varieties of capsicum under polyhouse when compared with that earned when grown in open field conditions.

The research study found that a farmer growing capsicum under protected cultivation can get an income of Rs. 17 lakh to Rs. 18 lakh per hectare as compared to their open field cultivation where the income may vary from Rs 1.88 lakh to Rs. 2.04 lakh per hectare. Therefore, growing vegetables under protected conditions have proven a boon to the growers of Solan district.

Similarly, a study undertaken by the NABCON (NABARD consultancy services) in 2017 to ascertain the impact of protective cultivation revealed that the productivity of crops of different vegetables increased 3-8 times as compared to cultivation in open fields and a poly house of 500 sq m can generate employment for 3-5 persons round the year with farmers earning Rs 1.80 lakh per year depending on the crop – capsicum, tomato or cucumber among others. The productivity in protective area was 18 to 415 times more than the open area.

Advantages of Protected Cultivation

- Higher productivity and better quality of produce.
- Provides safeguard against adverse weather conditions and enhance life span of crops.
- Able to produce vegetables (and flowers) round the year. So it is a boon for growing off-season vegetables.
- Better adoption of precision farming practices like precision planting/seeding, fertigation, micro-irrigation, weed management, pest and disease management etc.
- Efficient inputs use and reduction in cost of production.
- Conservation of water

- Easy to adopt organic farming practices which are eco friendly
- Availability of safe clean food products with full traceability

Schemes for Protected Cultivation

Several schemes of both central and state governments are being implemented for the promotion and development of protected cultivation. Mission for Integrated Development of Horticulture (MIDH) is a Centrally Sponsored Scheme for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo. Under MIDH, Government of India (GOI) contributes 90 percent of total outlay for developmental programmes in the North Eastern States and Himalayan States.

According to the Economic Survey, HP for 2019-20, for the implementation of the Centrally Sponsored Scheme, MIDH during the year 2019-20, funds amounting to Rs. 53.15 crore was approved and a total number of 2,52,453 farmers had benefited from the year 2003-04 to December, 2019 under this Mission.

The state government has also launched several schemes to promote protected cultivation. With a view to increase socio-economic conditions of small and marginal farmers and provide gainful employment to farmers, the project on "Production of vegetables under Protected Cultivation", renamed as Dr.Y.S.Parmar Kisan Swarozgar Yojna, was implemented in 2015. This scheme was launched with an outlay of Rs. 111.19 Crore. The scheme envisaged setting up 4700 poly houses and 2150 Drip/ Sprinklers Irrigation units in the following four years.

Besides, government of Himachal Pradesh had introduced a new scheme Mukhya Mantri Green House Renovation Scheme in 2017-18. Under this scheme, 50 percent subsidy is provided to the farmers for the replacement of poly sheet after 5 years of setting up of polyhouse or damage due to natural calamities.

Since the cost of erection of polyhouse is huge (approximately Rs. 10 lakh per 1000 sq.m.), state government gives subsidy to the tune of 85 percent. As a result, the district has so far covered approximately 31.8 ha area under polyhouse under the central scheme of Horticulture Mission for Northeast and Himalayan states (HMNEH) and state-sponsored scheme of Dr Y S Parmar Kisan Swarozgar Yojna. For the entire state, 3050 polyhouses covering an area of 55 ha has been brought under protected cultivation in the state, so far². As per Economic Survey for Himachal Pradesh, 2019-20, additional 7.2 ha area was targeted to be covered during 2019-20.

Besides, keeping in view the damage caused to the polyhouse structure due to natural calamities and losses incurred by the farmers, the Govt. of Himachal Pradesh launched a scheme named –

² *"Off-Season Vegetable Cultivation Transforms Rural Economy in Himachal", One India, August 27, 2017*

Mukhya Mantri Greenhouse Renovation Scheme (MMGRS) (FY 2017-18) in order to provide support to farmers.

Despite such subsidies provided by the state government, the total budgetary allocation of the government is not enough to meet the huge demand for polyhouses and there is a scope to bring more area under protected cultivation.

The tracking parameters of monitoring the progress of this intervention are the following:

- Increase in area brought under protected cultivation
- Increase in number of farmers getting benefit
- Change in productivity of crops
- Change in production levels of off-season vegetables and fruits

For some of the baseline numbers, refer to Appendix Tables A3 and A4.

III.3. Aromatic crops to be used in the production of essential oils

Aromatic plants are critical to Himachal Pradesh economy. Currently, to boost their incomes, some farmers across the state switch to aromatic plant cultivation due to uncertain weather conditions. Since 2017, close to 700 hectares have been brought under the cultivation of aromatic plants such as wild marigold in Himachal Pradesh³. The production of marigold in the country is not enough to meet the demand and hence India imports the flower from Australia, France, and Brazil. The success of these farmers has since attracted many others to join, Himachal Pradesh produced 7.6 tonnes of essential oils from wild marigold alone.

The phenomenon is no longer restricted to Himachal Pradesh. The fragrance of higher revenues from aromatic plants has caught the fancy of small farmers living in the high-altitude villages in the neighbouring cold arid region of Ladakh as well. Tapping in on the growing interest among farmers, Ladakh Farmer and Producer Cooperative Limited (LFPCL), in 2019 signed a pact with the Council of Scientific and Industrial Research (CSIR), the primary scientific and research organisation of the federal government, as well as the Institute of Himalayan Bioresource Technology (IHBT), a Palampur-based lab, for the cultivation of several aromatic crops like lavender and damask rose, besides marigold. Ladakh receives little or no rainfall and the union territory does not have well-developed irrigation and hence cultivating water-consuming crops is a challenge, but the terrain is ideal for aromatic crops.

Around the world also, aromatic crops are widely cultivated due to its high-revenue earning essential oil which is utilized in agrochemical, food, flavoring, perfumery and pharmaceutical

³ <https://mediaindia.eu/business/himachal-farmers-switch-to-aromatic-plants/>

industry. The global essential oils market demand was 226.9 thousand tons in 2018 and projected to expand at a CAGR of 8.6% from 2019 to 2025.

Places, like Mahog bagh and Parwanoo, have high availability of flowers like wild marigold, damask rose, lavender, rosemary, lemongrass and mushkbala.

Advantages of Aromatic Crop cultivation

- Aromatic plants are more resistant and less prone to pests.
- With the huge demand of perfumes, condiment and flavouring industries yield higher revenues per acre to the farmer, as compared to the cereals or other traditional crops cultivated in the state.
- The profit of cultivating aromatic plants are clear, in just three years, the initial batch of 861 farmers that cultivated marigold in the state have earned INR56 million (USD 800,000)⁴.
- Besides the monetary gain, the state also gained ecologically from this cultivation as most of the land used for growing marigold was wasteland or unproductive farmland.
- Essential oil extracted from aromatic crops have huge demand in perfumery, flavour and fragrance industry in India and abroad.
- The essential oils also have insect repellent properties, anti-inflammatory, antifungal and antibacterial characteristics, which make them useful in numerous applications like control of store grain insect pests, healing wound and treatment of eczema, diaper rash, psoriasis and for skin ointment.

Now, a processing unit to churn out essential oils from these crops is being set up by CSIR-IHBT in Ranbirpura, Leh and in Thiksay. IHBT also took the initiative to train the farmers and also set up 16 distillation units in Himachal Pradesh that are operated by farmers' cooperatives. The CSIR has started the Aroma Mission, under which it plans to expand cultivation of essential oil yielding crops to 5500 hectares all over India by 2022.

The Indian Institute of Integrative Medicine in Jammu has been promoting lavender and aromatic plants like rosemary, geranium and clary sage as the oils from these plants are highly sought after by perfumery and cosmetics industry. Also, globally, the market is projected to grow at nearly 9 pc up to 2025, according to Fortune Business Insight, a market research company.

To promote cultivation of these aromatic crops among the farmers, CSIR-IHBT has developed a complete package of agro and processing technologies and executed in the farmers' fields to help

⁴ <https://mediaindia.eu/business/himachal-farmers-switch-to-aromatic-plants/>

them realize the profits. Depending upon the quality and quantity of essential oil, farmers of hills can earn net profit of 0.8 to 1.5 lakhs per hectare annually.

Nineteen processing units have been set up for these societies to empower the farmers for production of essential oils. With the efforts of CSIR-IHBT, Himachal Pradesh has become the largest producer of high-quality wild marigold essential oil (4 tonnes per annum) in India to meet the demand of perfume, flavouring, and condiment industries.

In order to promote the cultivation of aromatic crops, it is suggested that post-harvest infrastructural facilities are provided. These include cold storage facilities and appropriate air-conditioned transportation facilities. These are because of the perishable nature of the flowers. This will also encourage farmers to augment their production capacities. New marketing strategies are also needed 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.

These recommendations may be implemented under HMNEH scheme, under MIDH scheme.

The tracking parameters of monitoring the progress of this intervention are the following:

- Change in revenue earned by farmers
- Change in land use or change in wasteland area if wasteland is used for cultivation of aromatic plants
- Number of Export orders placed

For some of the baseline information, refer to Appendix Table A7.

III.4. Incentives to the Industry

We had suggested various interventions for the industrial sector. Some of these have been addressed in the New Industrial Policy, 2019. But some are under review or are not addressed at all. Some of these are described below:

- ***For the pharma industries, the essential components like testing laboratories to conduct tests may also be considered as P&M:***
 - The pharma industries assert that Drug testing laboratories are not given any subsidy in Uttarakhand and HP although the same is given in other special category states. The New Industrial Policy, 2019, does not address this concern.

- ***Easing the process of obtaining Essentiality Certificate***

- Essentiality certificate is required for investors who need land, which falls outside the Industrial Area. Hence obtaining EC is a mandate for setting up a new economic unit in the state. This was a tedious and difficult process which had been discouraging many private companies to set up a unit in the state. According to a circular released in July, 2019, the Revenue Department has issued a notification regarding HP Tenancy & Land Reforms (Amendment) Rules, 2019 on 25th June, 2019, according to which the format of the EC has been substituted and now only a Preliminary Project Report is required at the time of issuance of EC, making the process much simpler.

- ***Relax the mandate to employ a minimum of 80 percent labourers from within the state***

- The mandate was supposed to bring more Himachalis under workforce but that is not happening due to lack of skill and industries end up hiring employees from other states. In this regard, the Govt. of H.P. has in fact incentivised the employment of Bonafide Himachalis over and above 80 percent by giving an incentive of Rs.1000 per month per additional employment generated over and above of 50 Bonafide Himachalis for ten years from the date of production (notification on “The Himachal Pradesh Industrial Investment Policy, 2019” and “Rules Regarding Grant of Incentives, Concessions and Facilities for Investment Promotion in Himachal Pradesh-2019”, dated 16th August, 2019). In addition to above, Bonafide Himachalis employed by the industrial enterprises would be eligible for skill development allowance as notified by the Department of Labour & Employment under Skill Development Allowance Scheme-2018.

- ***Removal of mandate of obtaining an appraisal of a scheduled bank before sanction of an assistance***

- This means that the industries have to necessarily borrow from a bank or an FI to avail the benefit of the scheme. Many industries prefer NBFCs over Banks and other FIs. According to Mr. Sanjay Kanwar, Jt. Director, Industries, Baddi, in meeting held in Nov, 2019, the said condition for self-financing industries has been relaxed to appraisal from HIMCON (Himachal Consultancy Organization) instead of only from Scheduled Bank or Financial Institution.

- ***Resolve the issue of exorbitant transport cost charged by the Truck Union***
 - As of now, the transportation cost is very high and Truckers' Union is very strong, which does not let private operators from other states to function in the state. However, now, the transportation rates have been relaxed. According to notification on "The Himachal Pradesh Industrial Investment Policy, 2019" and "Rules Regarding Grant of Incentives, Concessions and Facilities for Investment Promotion in Himachal Pradesh-2019", dated 16th August, 2019: Transport Subsidy Eligible Industrial Enterprises would be incentivized to compensate high cost of transportation within the State, irrespective of fact that source of purchase or destination of sale is within or outside the State:
 - (a) Enterprises located in Category B areas would be reimbursed actual expenditure incurred on transportation of raw materials & finished products within the state or 3% of annual turnover, whichever is lower, subject to maximum of Rs.10 lakhs per annum for MSMEs and Rs. 20 lakh per annum for large units, for a period of 3 years.
 - (b) Enterprises located in Category C areas would be reimbursed actual expenditure incurred on transportation of raw materials & finished products within the state or 5% of annual turnover, whichever is lower, subject to maximum of Rs.10 lakhs per annum for MSMEs and Rs. 30 lakh per annum for large units, for a period of 5 years.

- ***Promotion of rural industrialisation***
 - This recommendation is especially related to food processing. We have found that State Mission for Food Processing - 2017, promoted by Department of Industries is working towards achieving this objective

The tracking parameters of monitoring the progress of this intervention are the following:

- If the essential components like testing laboratories to conduct tests are also considered as Plant & machinery, pharma industries will be able to avail the subsidy given on plant & machinery.
- Change in number of processing units in rural areas
- Number of new investors/industrial units set up in the district

For some of the industry related baseline numbers, refer to Appendix Table A8.

III.5. Development of Tourism in the district

Given the scenic beauty of the district and its potential in attracting a number of tourists, we had recommended the development of new tourist destinations in the district. The potential target areas were Waknaghat, Kandaghat and Chail Kufri corridor; Barog, Solan, Bhararighat and Sadhupul. Most of these recommendations have also been implemented in the district or are under review. In addition, a number of new initiatives are planned.

A number of initiatives have been taken, especially in Waknaghat, Kandaghat and Chail Kufri corridor. According to Sh Hem Chand Kashyap, ARO Tourism Deptt. Shimla in a meeting on 25th Nov, 2019, wayside amenities are under operation in Barog, Solan, Bhararighat and Sadhupul. Besides, following interventions are planned for expansion of tourism in Waknaghat, Kandaghat and Chail Kufri corridor:

- Amusement part to be developed at Chail to attract the tourism on the analogy of adventure park of Kufri.
- Some sitting and viewpoints like gazebo places can be developed on the spare land where there are beautiful sight seeing places.
- Adventure Park proposed to be created at Sadhupul adjoining the Sadhupul Lake. This was one of our recommendations.
- Development of road from Kandaghat to Khurbi Devi temple. This place can be developed with historical and religious importance. This was also one of our recommendations of providing an alternative routes between important destinations.
- Beautification of railway station at Kandaghat
- Wayside amenities on NHAI road near Waknaghat at acquired width of NHAI.
- Development of trek route and sitting points from Mamleeg market to Bagyani Devi Temple
- Development of Airport viewpoints.

For some of the baseline information, refer to Appendix Table A5.

IV. Handholding Support for Implementation

This section briefly presents the important activities undertaken towards providing the handholding support to the district. For this, we have been in regular contact with the District Administration Office, especially Mr. Vivek Chandel, ADM, Solan.

Among the key activities undertaken were:

- Requested Mr. Chandel to send an official communication to all the stakeholders/departments to suggest the implementation plan for the proposed recommendations, which NCEAR could facilitate or expedite to achieve the required targets.
- The relevant stakeholders/departments met for the consultation were the following. These represent the state government and private establishments.
 - Agriculture Department
 - Horticulture Department
 - Tourism Department
 - District Industries Centre
 - Industry Association, Baddi
 - Registrars of Private Universities
- The study team had interactions with these departments in both Phase I and Phase II. Dr. Sunil also visited these departments separately.
- Mapped the recommendations of Phase I with the existing schemes so that the recommendations may be implemented. This mapping is given in Table II.1.
- The team met the ADM, Solan on 16th October, 2019. He facilitated our meeting with other concern officials. Also, he appointed Mr. Bhanu Gupta, Assistant Commissioner, Solan district as the nodal officer for the study.
- Had consultation meetings with the registrars of various private Universities like Shoolini University, Bahra University and Maharaja Agrasen University. The key take-aways was that these universities have never conducted any entrance exam in any stream, although they consider the merits of JEEs and NEETs and all other exams conducted at State level by HPU and Technical University HP in their admissions.

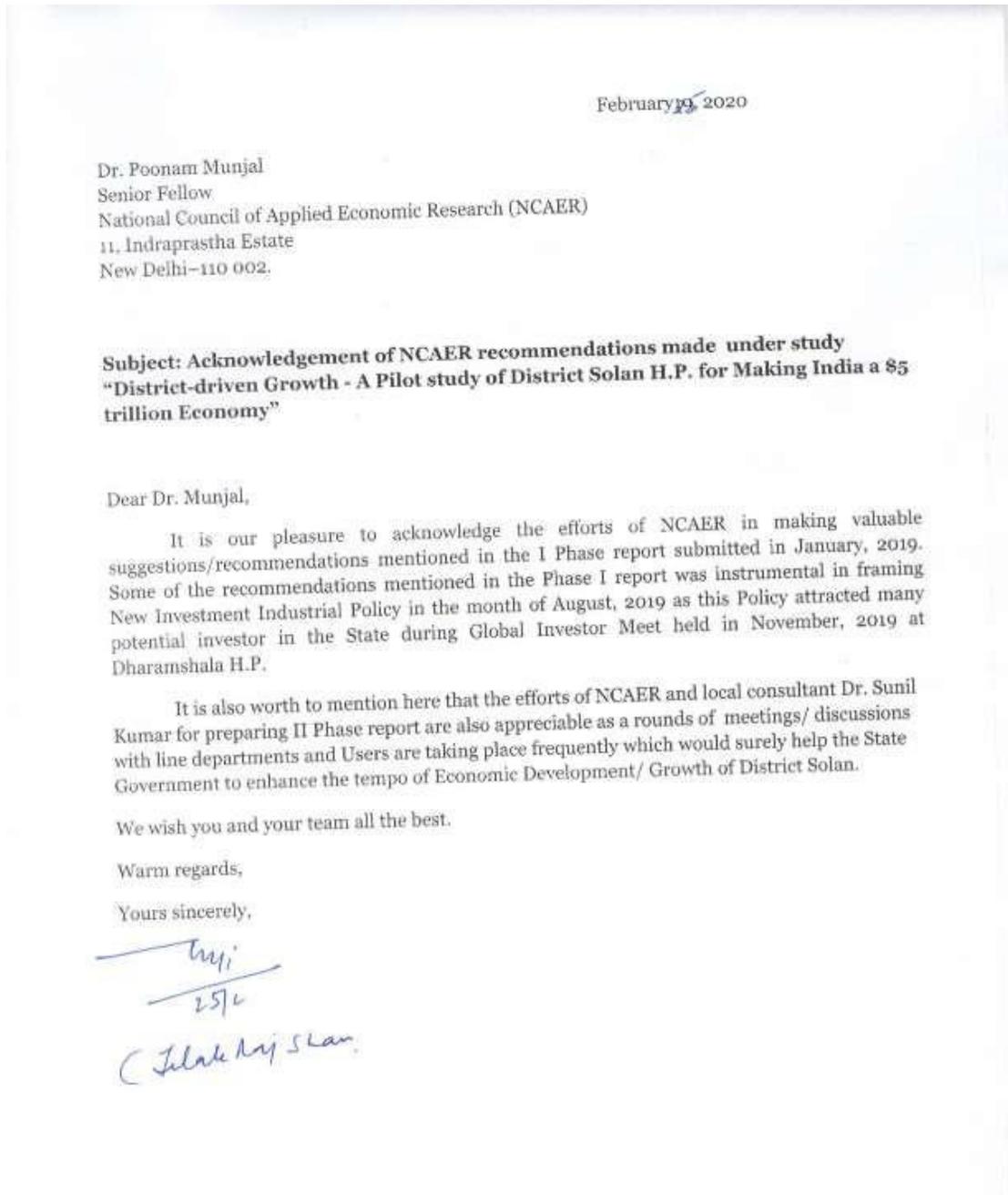
- Obtained important information on interventions taken by the district for the promotion of tourism, in the meeting held with Mr. Hem Chand Kashyap, ARO, Tourism Department Shimla. He gave information regarding expansion of tourism in Waknaghat, Kandaghat and Chail Kufri corridor.
- *Letter from Mr. Tilak Sharma, Joint Director, Industries, DIC, Shimla, acknowledging the efforts of NCAER in getting some of the recommendations implemented is attached in Annex 1.* This letter acknowledges our handholding activities in the district.
- Besides, we had planned to organize some training programmes, especially on aromatic crops. We were in correspondence with CSIR-IHBT to conduct a training programme in Solan. The principal investigator of essential oil, Dr. Rakesh Rana of IHBT had agreed to hold the training session on 18th March 2020. However, due to the Government of India advisory not to organize any public gathering as a precaution to avoid COVID-19, the programme has been postponed.
- Letters of request have been sent to DPIIT for their possible interventions in some of our recommendations, like promotion of cannabis cultivation and budget enhancement towards provision of subsidy for constructing polyhouses.

V. Documentation and Communications

The District Administration and the key government departments of the state, like Agriculture, Horticulture, Floriculture, Industry and Tourism have been consulted on a regular basis. The officials of these departments have been extremely cooperative through the course of the study. Besides, the industrial associations of key industrial areas have also been consulted which helped the team in identifying the thrust areas of growth, main constraints and industry concerns in the Phase I and further interactions in Phase II helped the team in realising how the state efforts, along with NCAER efforts, have led to implementation of key policy measures. These have been discussed in detail in Section III.4 and the acknowledgement letter written by Joint Director, District Industries Centre, is in Annex 1 of this report.

The activities have been well documented and are discussed in detail in this report. The district stakeholders have always been communicated with the developments. The Phase I report was widely circulated among the key stakeholders. Similarly, Phase II report will also be shared with them.

Annex 1: Letter of Acknowledgement of NCAER efforts from DIC, Shimla



Letter from Mr. Tilak Sharma, Joint Director, Industries, DIC, Shimla

Annex II: Letter regarding recommendation for Protected Cultivation in Solan from Department of Agriculture

**DEPARTMENT OF AGRICULTURE
HIMACHAL PRADESH**

No.Agr.Sln (1) B-35/2014 Vol-V

— 3514

Dated 21-11-2014

To The Director of Agriculture
Himachal Pradesh, Shimla – 5

Subject: **Regarding recommendations for Agriculture Growth thereof**

As per telephonic conversation held with Dr. Neerja madam from Ministry of Commerce, Govt of India today regarding the above mentioned subject. In this regard we submit that our district being hilly, the land holdings of farmers are very less. As a result of that maximum area is under intensified vegetable growing. Farmers take three or more vegetable crops during the year that have protected structures but farmers who do not have these structures can only take one or two crops during the season.

We further submit that our state is also providing 85 % subsidy for construction of Polyhouse structures but the funds which they provide are less and does not meet the demand as a result many farmers are not getting subsidy for construction of these protected structures. We have covered more approximately 20 ha area under Polyhouse under Pandit Deen Dayal Upadhyay and Dr Y S Parmar Kisan Swarozgar Yojna (state run schemes) but the scope is much more. The area which can be converted into protective cultivation area by 2022 is 30 ha approx if we get sufficient funds under the schemes. The funds required are to the tune of Rs. 50 Crores to cater the demand of farmers for construction of Polyhouses. If we can do it we will surely be able to double the income of farmers by 2022.

Submitted for information please.

Yours faithfully,


Deputy Director of Agriculture,
Solan, District Solan H.P.

Appendix Tables – Baseline Statistics

Table A.2: Solan Gross District Domestic Product at current prices

S.No.	Economic Activity/Sector	2011-12	2012-13	2013-14	2014-15	2015-16
1	Agriculture & Animal Husbandry	65158	71487	92766	87515	87757
1.1	Crops	55995	65211	84119	78797	76215
1.2	Live stock	9163	6276	8647	8718	11542
1.3	Forestry & Logging	17538	15263	15884	17305	15462
1.4	Fishing	259	268	355	451	495
2	Mining & Quarrying	16380	17207	17152	20907	19431
3	Manufacturing (Organised & un - Organised)	1357560	1499746	1725337	1864799	1949086
4	Elect. Gas, Water Supply & Other utility services	12730	15140	19758	16397	19704
4.1	Electricity, gas & other utility services	9924	12191	17077	13910	16660
4.2	Water supply	2806	2949	2681	2487	3044
5	Construction	52457	57337	62921	65258	68405
6.1	Trade & .Repair Services	36745	42604	49333	56247	60413
6.2	Hotel & Restaurant	13179	14057	14548	16073	17335
7.1	Railways	474	529	637	828	868
7.2.1	Road Transport	27095	27137	47324	44976	49374
7.2.2	Water Transport	0	0	0	0	0
7.2.3	Air Transport	0	0	0	0	0
7.2.4	Services Incidental to Transport	136	133	243	257	274
7.3	Storage	13	14	9	7	4
7.4	Communication & Services related to broadcasting	12486	13292	17079	19391	21028
8	Financial Services	28461	31544	32939	37119	40483
9	Real Estate. ownership of dwellings & professional services	70846	85496	100708	118712	134780
10	Public Administration.	24659	29318	30403	34990	41827
11	Other Services	48675	56836	60851	69795	85954
	Total-Community & Personal Services	73335	86154	91253	104786	127781
12	Gross District Value Added at basic prices	1784852	1977409	2288246	2471028	2612680
13	Product Taxes	141810	159877	194422	226173	255614
14	Product Subsidies	56504	61859	55976	65501	64643
15	Gross District Domestic Product	1870158	2075425	2426692	2631700	2803651
16	Population (,00)	5834	5886	5937	5989	6042
17	Per Capita (Rs.)	320564	352631	408740	439422	464032

Source: Department of Economics and Statistics, HP, Shimla

Table A.3: Percentage share of broad sectors in Gross District Value Added (Solan)

	2011-12	2012-13	2013-14	2014-15	2015-16
Agriculture & allied	4.6	4.4	4.8	4.3	4.0
Industry	77.7	77.5	77.0	77.0	76.1
Services	17.7	18.1	18.2	18.8	19.9
Total	100.0	100.0	100.0	100.0	100.0

Source: Department of Economics and Statistics, HP, Shimla

Table A.3: District-wise area in Poly-houses under the Horticulture Technology Mission (up to March 2011)

	Number of Poly-houses	Area under Protected Cultivation
Bilaspur	270	20.97
Chamba	135	2.29
Hamirpur	99	4.18
Kangra	256	6.58
Kinnaur	0	0
Kullu	22	0.57
Lahaul	17	0.05
Mandi	204	9.88
Shimla	89	5.84
Sirmour	75	5.42
Solan	127	11.06
Una	50	4.8
Under RKVY	170	9.58
Total	1514	81.22

Source: "Scaling-up of protected cultivation in Himachal Pradesh, India", Anil K. Choudhary, Article in Current science · July 2016; DOI: 10.18520/cs/v111/i2/272-277

Table A.4: Physical and Financial Progress in Solan since inception of scheme (in 2015) till 31st March, 2018 in Dr. Y.S. Parmar Kisan Swarozgar Yozna

S.No.	YEAR	No.	AREA (in Ha)	Budget (in Lakh)	No. Of Beneficiaries	Expenditure
1	2014-15	140	1.7328	140.86	91	140.86
2	2015-16	163	3.9873	406.05	163	406.05
3	2016-17	154	4.4465	393.83	69	393.83
4	2017-18	157	4.2236	305.28	40	305.28
5	2018-19	92	NA	333.12	NA	NA
	TOTAL	706	14.39	1579.14	363	1246.02

Source: Agriculture Department, Solan

Table A.5: Domestic and Foreign Tourist Visits in Solan (number)

	2016		2017	
	Domestic Tourist Visits	Foreign Tourist Visits	Domestic Tourist Visits	Foreign Tourist Visits
Jan	65363	655	132454	527
Feb	64530	851	73679	560
Mar	130343	984	94401	717
Apr	82385	753	136428	543
May	95922	780	76627	583
Jun	83750	282	94913	753
Jul	98136	736	101080	758
Aug	68881	212	71636	221
Sep	139090	436	143262	457
Oct	128685	406	132545	418
Nov	70846	400	73679	416
Dec	89906	478	94401	501
Total	1117837	6973	1225105	6454

Source: Ministry of Tourism, Govt of India

Table A.6: Agriculture Statistics (Solan District)

	2014-15	2015-16	2016-17	2017-18
Area under fruits (hec)	6363.5	6178.94	6925.43	6081.03
Production of fruits (MT)	9855	8255.03	9734.31	9629.03
Production of vegetables (MT)	327537			
Area under Capsicum production ('000 hec)	1.12	1.13	1.15	-
Capsicum production ('000 MT)	33.69	34.02	34.41	-

Source: District Solan at a glance, 2017-18; Economic Indicators, HP – 2014-15; Horticulture Statistics at a glance, 2018

TABLE A.7: AREA UNDER AROMATIC FLOWER CROPS

	1999-20	2005-06	2006-07	2008-09	2011-12	2012-13
Area under flowers (hec) - Solan	22.0	27.4	43.25	52	58.57	66
For the state as a whole, as of Nov, 2019						
Production of essential oils	7.6 tonnes from wild marigold alone					
Number of farmers benefitted	861					
Cumulative earning	Rs. 5.56 crore					
Area under flower crops (hec)	700 hectares					
Target set by CSIR's Aroma Mission	Expand cultivation of aromatic crops to 5500 hectares by 2022					

Source: State Department of Horticulture, HP.

<http://www.hpagrisnet.gov.in/hpagris/Horticulture/Default.aspx?SiteID=5&PageID=1391>

and

<https://www.downtoearth.org.in/news/agriculture/himachal-farmers-have-an-affair-with-flowers-67544>

Table A.8: Solan Industrial Statistics

	As on 31st Aug, 2015	As on 31st Aug, 2018
Number of industrial units since inception	5408	7561
Small scale	5060	7141
Medium Scale	241	313
Large scale	107	107
Investment since inception , Rs crore	-	18896
Small scale	-	9151
Medium Scale	-	5509
Large scale	-	4237
Employment since inception, number	70538	156158
Small scale	25208	101281
Medium Scale	21168	30715
Large scale	24162	24162
Export from Solan district (Rs crore)	5264	7084

Source: District Industrial Profile, various years



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