

**Annexure -D**

**FOUR YEAR STRATEGIC ACTION  
PLAN (4SAP) -2019-23  
AND  
ANNUAL ACTION PLAN 2019-20**

**DEPARTMENT OF AGRICULTURE &  
FARMERS WELFARE, PUNJAB**

**SUSTAINABLE  
DEVELOPMENT GOALS  
AND  
KEY PERFORMANCE  
PARAMETERS**

## INTRODUCTION

Punjab has been a star performer in agriculture during the heydays of the Green Revolution. Agriculture in Punjab grew at a high growth rate of 5.7 per cent during 1971-72 to 1985-86, which was more than double the all-India growth rate (2.31 per cent during this period). It was this spectacular performance of Punjab, first wheat surpluses followed by steep rise in production of rice, which helped India free itself from the PL 480 food aid and its associated political strings. Punjab played a crucial role in achieving the much needed food security for India. However, the state slipped soon after and grew at a lower rate of about 3 percent between 1986-87 and 2004-05, equivalent to the all-India agricultural growth rate.

The Punjab agriculture, has now reached a sort of plateau in terms of productivity and profitability. The state has about 4.2 million hectares of cultivatable area, which is 3 percent of the net area sown in the country. It produces about 18 percent of India's Wheat and 11.3 percent of Rice contributed 25-50 percent of Rice and 38-75 percent of Wheat to the Central pool of food-grains over the last four decades.

Thus, the state of Punjab has long been a significant contributor to the central food grain pool and has played an important role in sustaining food security of the country. Due to limited surface water availability, irrigation demand is mainly met from groundwater. The intensive agriculture being followed in the state has taken its toll on water resources and presently more than 70% of geographical area is battling with over-exploitation of groundwater resources. Considering alarming situation of ground water depletion, it is incumbent upon us to improve irrigation water use efficiency and develop alternate irrigation water sources in order to safeguard our water resources for future generations.

The State is entrusted with the job of formulating and implementing schemes for conservation, up-gradation and optimum utilization of Soil and Water resources of the State. The major aim is to enhance productivity with the available resources without adversely affecting natural resources in terms of ground water, soil health and environment. State is implementing schemes/ projects for efficient use of irrigation water and on-farm management of water resources besides rainwater harvesting and enhancing productivity in sub-mountainous kandi areas of the state.

For judicious use of available surface and sub-surface water resources, the state has provided financial and technical assistance for laying of underground pipeline system on 4.94 lakh ha. and promoted Micro Irrigation (drip and Sprinklers) technology on 33,710 hectares. It has also installed underground pipeline projects for utilizing the treated waste water from 48 Sewerage Treatment Plants (STPs) to irrigate 6,386 hectares. More than 600 Rainwater harvesting and recharging structures have been constructed in hilly areas.

Horticulture has assumed greater importance in recent years since this sector has been identified as remunerative for diversification of land use which provides increased employment opportunities, better returns per unit area besides filling the nutritional gaps and countering the negative consequences of climate change by providing better carbon trade and carbon sink.

Farmers in Punjab have started taking up Horticultural crops as a separate viable economic activity. Horticulture in Punjab has established its identity as a high value vanguard of agricultural and rural economy which not only has much higher potential to generate higher profit per unit area but also provides more productive employment opportunities alongwith the much required nutritional security for the people.

At present, the area under Horticultural crops is about 3.81 lac ha. from where 73.28 million tonnes of production is estimated. It is contributing 12.43 % value to State's Agriculture GDP from only 4.60 % (3.81 lac ha.) of gross cropped area.

To bridge the gap between the farmers and the policy makers and to redress the problems faced by the farming community, the state government has set targets for sustainable development of peasantry. The detail is given as under:-

**1. VISION - MISSION STATEMENT OF THE DEPARTMENT:**

Sustainable Agricultural for equitable economic growth, rural prosperity and ensuring food security of the country. Thereby, providing economic prosperity to the farmers of the state.

- To improve the income of farmers.
- To provide chemical/pesticide free foodgrains to the people of Punjab
- To attain long term inclusive growth in Agriculture with technologically feasible, economically viable and environmentally sustainable initiatives.
- To conserve the natural resources essential for sustained agro ecosystem.
- Sustainably increase the productivity and production of crops to ensure national food security as well as social and economic upliftment of people in rural areas and saving environment through natural resource conservation.
- Conservation and Management of Soil, Water and related Natural Resources and enhancing Agriculture Productivity of the State.
- To shift the area from traditional crops to Horticultural crops.
- Strengthening the production & supply of quality Pedigree planting materials.
- Promoting High Density Plantation
- Development of crop based adaptation strategies to minimize the effect of climate change.
- Promoting profitable Horticultural production systems which contribute to greenhouse gas abatement.

**2. SECTORAL SUSTAINABLE DEVELOPMENT GOALS AND TARGETS.**

The Sectoral Sustainable Goals relating to Agriculture & Farmers Welfare, Soil Conservation & Horticulture Department alongwith objectives are listed below:-

**Goal-1 : End poverty in all its forms everywhere**

**Objective:-**

To help small & marginal farmers come out of debt cycle and ensure Minimum Income Support

**Goal-2 : End hunger, achieve food security and improved nutrition and promote sustainable agriculture**

**Objective:-**

- Increase The Income of Farmers
- Reduce Input Costs

- Improve the health and Environment
- Maintain Genetic Diversity
- To Introduce New Varieties which are pest resistant and give higher yield.
- Management of Straw Burning
- Ensuring supply of quality fruits and vegetables to consumers at affordable price.
- Ensuring healthier diets that improve the nutritional status among children and the working capacity of adults leading to higher incomes and a reduction in poverty.
- Improving quality and productivity of horticultural crops at minimal costs.

**Goal-6: Ensure availability and sustainable management of water and sanitation for all**

**6.3: By 2030, improve water quality by reducing pollution and substantially increasing recycling and safe reuse globally**

**Objective:-**

- To optimally utilize the water resource and infrastructure created for treating waste waters in the State.
- To reduce dependence on underground water for irrigation thus checking ground water over exploitation.

**6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity in irrigation sector**

**Objective:-**

- On-farm conservation of irrigation water
- Efficient use of irrigation water from available sources
- Assured irrigation in canal command as well as tubewell-irrigated areas
- Increase in produce quality, yield and production with timely irrigation.

**Goal-8: Promote sustained, inclusive and sustainable Economic growth, full and productive employment and decent work for all**

**Objective:-**

- To Check Depleting Water Table through Crop Diversification.

**Goal-12: Ensure sustainable consumption and production Patterns**

- To Sustain Food production
- Improve Soil Health

**Goal 13 : Take urgent action to combat climate change and its impacts.**

- To combat the effect of climate change by increasing green cover through horticulture in comparison to traditional crops like wheat, Paddy. Horticultural crops have a much bigger role to play in countering negative consequences of climate change by providing a better carbon trade and carbon sink.

3. **PRESENT STATUS OF THE GOALS, TARGETS AND BASELINE VALUES OF THE INDICATORS.**

**The present status of Goals , Targets and Baseline values of Agriculture & Farmers Welfare, Soil Conservation & Horticulture D Department are Given Below:-**

**Goal-1 : End poverty in all its forms everywhere**

**Present Status and Baseline Values of Indicators**

At present 5.52 lac Small & Marginal farmers have been provided relief under Debt Relief scheme by waiving off their loans

Under Minimum Income support 18.92 lac farmers have been provide relief under Paradhan Mantri Kisan Samman Nidhi Yojana in FY 2018-19

**Targets**

In current FY 2019-20 there is a target of providing relief to 1.14 lac farmers under Debt Relief scheme by waiving off their loans

There is a target of covering 25 lac farmers under under Paradhan Mantri Kisan Samman Nidhi Yojana.

**Goal-2 : End hunger, achieve food security and improved nutrition and promote sustainable agriculture**

**Present Status and Baseline Values of Indicators**

1. At present the Seed Replacement Ratio of wheat seed stands at 1.77 lac Qtls under NFSM and RKVY.
2. Under ATMA Scheme Extension activities are carried out to create awareness camps for farmers as well as refresher trainings are conducted for Agriculture Inspectors to abreast them with latest technology. District level training camps, Block level and village level training camps are organised every year for disseminating latest technology amongst the farmers. In 2018-19 1.00 lac farmers have been provided training at various levels.
3. Till date upto 31.03.19 5,26,000 Soil Health Cards have been issued to the farmers .
4. At present 5000ha area is under organic farming as per 2018-19.
5. As regards stubble burning the no. of incidents under wheat & Paddy stands at 11698 and 59158 respectively. Till 2018-19 subsidy on 28609 Straw Management Machineries has been provided, 92 Farm Machinery banks for Custom Hiring have been established, 3 High Tech High Equipment Hub for Custom Hiring have been established and 43 Farm Machinery Banks in selected Villages have been Created.
6. Present Air Quality in Punjab stands at of 150pm2.5.

## **Targets**

1. It is proposed to replace 225000 Qtls of wheat seed during FY 2019-20 and in the subsequent years so as to maintain 100% Seed germination and maintain higher yield and production.
2. It is also proposed to provide training to 1.10 lac farmers during FY 2019-20 and subsequently increasing in coming years to keep them abreast with latest technology .
3. The target for 2019-20 for issuance of Soil health cards is 3,39,886 which will be maintained in the subsequent Years also.
4. During 2019-20 it is proposed to bring 6000ha area under organic farming with an eventual target of covering 72000ha by 2030.
5. It is proposed to reduce the incidents of Stubble burning to zero by 2022 and bring the air Quality index to 70pm2.5 by 2030 . During 2019-20 there is a target of providing 44177 Straw Management Machineries on subsidy, Establishment of 250 Farm Machinery banks for Custom Hiring have been established, 12 High Tech High Equipment Hub for Custom Hiring have been established and 160 Farm Machinery Banks in selected Villages

## **Present Status and Baseline Value of Indicators.**

Horticultural Crops ( Fruits, Vegetables, Mushrooms, Spices, etc) have emerged as a best option not only to provide required nutrients but also to enhance access to food through enhanced farm profitability. During the year 2018-19 the production of horticulture in the the state was 73.28 lac M.T.

## **Targets**

In current FY 2019-20 there shall be target of production of horticulture crops to about 76.78 lac M.T which would be around 2.50 MT increase over the last year. This increase in production will increase per capita availability of fruits and vegetables among the population thus countering malnutrition.

## **Goal-6: Ensure availability and sustainable management of water and sanitation for all** **6.3: By 2030, improve water quality by reducing pollution and substantially increasing recycling and safe reuse globally**

### **6.3.2: Use of treated water from Sewerage Treatment Plants (STP's) for irrigation**

At present, there is more than 1500 MLD of treated waste water emanating from various cities/ towns in Punjab. The department has taken up an innovative programme of installing projects to optimally utilize treated waste water from Sewerage Treatment Plants (STP's) for irrigation of adjoining agricultural fields.

It has been envisaged to irrigate 2.51 lakh ha. with treated waste water by 2030. A target of benefiting 12,261 ha. has been fixed for 2019-20 based on the proposals either already submitted or likely to be submitted for approval to GoI under PMKSY and MABARD under RIDF respectively.

Till 2018-19, 48 projects have been completed thereby irrigating 6,386 hectares that has been taken as the baseline value.

## **6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity in irrigation sector**

### **6.4.2: Promotion of Underground Pipeline System for on-farm conservation of irrigation water**

Under Ground Pipeline System involving mainly RCC/PVC/HDPE pipes to convey irrigation water is a technology that has proved to be highly useful in On-farm conservation

of irrigation water during the last few decades. It saves water, power, labour and land. Keeping in view the numerous benefits and in view of depleting ground water resources, it is important to motivate all farmers to adopt underground pipeline system of irrigation by shifting from conventional flood irrigation method by providing financial assistance in the form of subsidy along with technical support.

A target has been fixed to bring 6.49 lakh hectares under this technology by 2030. This target along with the target of benefiting 7742 hectares in 2019-20 shall be achieved on approval of various ongoing and proposed projects submitted to GoI under PMKSY and MABARD under RIDF.

The baseline value has been derived as 4.94 lakh hectares of area covered under underground pipeline till 2018-19.

### **6.4.3: Promotion of Micro Irrigation to increase water use efficiency in irrigation**

The need of hour is to conserve available water resources and develop a sustainable climate smart irrigation solution for the farmers, which also entails judicious use of water and at the same time augment agriculture productivity and production. Micro Irrigation (Drip and Sprinklers) provides efficient and smart irrigation solution to farmers that not only saves considerable quantity of water but also improves quality of produce in horticulture as well as agriculture crops. This efficient irrigation technology ensures utilization of same amount of water for irrigating more area as compared to conventional irrigation systems.

By 2030, an area of 76,618 hectares shall be brought under Micro Irrigation and there is a target to cover 2145 hectares in 2019-20 by providing subsidy to farmers. The funding shall be obtained from ongoing and proposed GoI/ NABARD funded schemes.

An area of 33,710 hectares benefited till 2018-19 has been considered as the baseline value.

## **Goal-8: Promote sustained, inclusive and sustainable Economic growth, full and productive employment and decent work for all**

### **Present Status and Baseline Values of Indicators**

Presently area under Paddy is 25.19 lac Hectare. The area under Maize is 1.14 lac Ha. Area under cotton and Basmati is 2.91 la ha and 5.46 lac ha respectively. Similarly Area under pulses is 28000 ha.

### **Targets**

Under Crop Diversification , it is proposed to shift area under paddy from 25.19 lac ha to 15.28 lac (with a shift of 9.91 lac ha) by 2030. Crop Diversification would break the current rice-wheat cycle and it will also help to check depleting water table. . Through Crop Diversification area under Kharif rice would be diverted towards less water consuming crops like Maize, Cotton, basmati , pulses etc. State Govt. will lay emphasis on bringing down the area under Paddy from 25.19 lac Hectare to 15.28 lac ha. The area under Maize will be increased from 1.14 lac Ha to 6.0 lac ha. Area under cotton and Basmati will be increased from 2.91 la ha to 7.0 lac ha and 5.46 lac ha to 6.20 lac ha. respectively. Similarly Area under pulses will be increased from 28000 ha. to 50000ha. Year-wise Strategy has been depicted in Annexure-1

## **Goal-12: Ensure sustainable consumption and production Patterns**

### **Present Status and Baseline Values of Indicators**

Punjab ranks 4<sup>th</sup> in the world in terms of productivity of wheat with 4596 kg/ha whereas it stands first in India amongst all the states. With regard to productivity of Kharif Paddy with 5933 kg/ha whereas average productivity of India is 3450 kg/ha. Punjab stands 3<sup>rd</sup> in terms of productivity of rice producing countries after China and Japan.

The current foodgrain production by state of Punjab Stands at 293.36 lac MT.



The use of pesticides in state of Punjab stands at 0.817 kg/ha whereas that of Fertilizers (NPK) stands at 212 kg/ha.

### **Target**

By 2030 there is a target of 325 lac MT of foodgrain production and reduction in use of pesticides to 0.675 kg/ha and use of fertilizers to 195 kg/ha.

## **Goal 13 : Take urgent action to combat climate change and its impacts.(Increase in area under Horticultural Crops)**

### **Present Status and Baseline Values of Indicators**

Area under various horticultural crops (Fruits, vegetables, Flowers, Spices) is 3.81 lac ha. during the year 2018-19

### **Target**

To combat the effect of climate change by increasing green cover through horticulture.( As horticultural crops produce less carbon and require less water for cultivation as compare to traditional crops like wheat & paddy)

From year 2019 onwards on an average approx. 16000 ha. area will be brought under horticultural crops over the last year of 3.81 lac ha. lessening the effect of climate change to a large extent . Detail is annexed in Annexure-I

## **4. STRATEGY TO ACHIEVE THE TARGETS/ACTION PLAN**

### **Agriculture & Farmers Welfare, Department**

In order to achieve the above said goals the Department will adopt the following strategy:-

#### **Crop diversification:**

Crop Diversification would break the current rice-wheat cycle and it will also help to check depleting water table. . Through Crop Diversification area under Kharif rice would be diverted towards less water consuming crops like Maize, Cotton, basmati , pulses etc. State Govt. will lay emphasis on bringing down the area under Paddy from 25.19 lac Hectare to 15.28 lac ha. The area under Maize will be increased from 1.14 lac Ha to 6.0 lac ha. Area under cotton and Basmati will be increased from 2.91 la ha to 7.0 lac ha and 5.46 lac ha to 6.20 lac ha. respectively. Similarly Area under pulses will be increased from 28000 ha. to 50000ha. Year-wise Strategy has been depicted in Annexure-1

#### **Foodgrain Production**

In order to maintain and increase foodgrain production it is proposed to maintain replacement of 2,25,000 Qtls of wheat seed annually so that germination and productivity is not affected.

#### **Availability of Quality Agro Inputs in sufficient Quantity & at a appropriate time.**

Farmer Machinery Centers on Custom Hire Basis would be encouraged to give the maximum Net Returns to the farmers.

#### **Stubble burning and Maintenance of Air Quality**

To Check the Air Quality and use of Natural resources more focus would be given to the Group Approach . It is proposed to give Subsidy on Staw Management Machinery@50% to Individuals & 80% to Farmers Groups and Custom Hiring centers.

### **Organic Farming**

In order to achieve the Goal of Doubling Farmers Income , Improve Soil Health and check depleting water table it is proposed to bring 72000ha of area under organic farming from current 5000 ha. through awareness campaigns and providing financial benefits through Centrally Sponsored scheme Paramparagat Krishi Vikas Yojana(PKVY).

### **ICT Awareness Activities like Pico Projectors, Display Boards, GPRS for technology dissemination.**

During conducting of farmers' trainings , Exposure visits, Interface, Interactions with agriculture experts and Mass Media Information Technology Tools will be adopted.

### **Intensive Training to Extension Functionaries for adoption of Crop Diversification.**

More focus will be given on Training of Trainers (TOT) for switching of Area from water gushing crops to less water consuming crops like, Maize, Cotton, basmati , pulses etc.

### **Soil Conserveation**

#### **Use of treated water from Sewerage Treatment Plants (STP's) for irrigation**

- ❖ The Department is implementing programme for use of treated water from sewerage treatment plants (STP) of various towns/cities.
- ❖ Irrigation infrastructure comprising of underground pipelines being installed from STP's under the programme
- ❖ State-wide action plan to utilize more than 700 MLD of treated water from STP's for irrigation prepared.
- ❖ A project proposal for utilization of 250 MLD treated water approved by State Govt and forwarded to NABARD for funding under RIDF-25.
- ❖ Project Proposal for utilization of 500 MLD treated water submitted to Govt of India for funding under PMKSY and RIDF-27.

#### **Promotion of Underground Pipeline System for on-farm conservation of irrigation water**

- ❖ Underground Pipeline System (UGPS) is being promoted for judicious use of on-farm irrigation water in canal command areas and in tubewell commands;
- ❖ Irrigation Water saving by 25% to 30% on farmers' fields;
- ❖ Capital assistance @90% on Community UGPS projects mainly in canal command areas.
- ❖ Subsidy @50% on Individual UGPS projects in tubewell commands areas.
- ❖ 2 NABARD funded RIDF projects are under implementation and 1 project A shall be proposed to NABARD for funding under RIDF-26.
- ❖ Govt of India has recently released funds for Water conservation activities under PMKSY.

#### **Promotion of Micro Irrigation to increase water use efficiency in irrigation**

- ❖ Promotion of Micro irrigation (MI) for efficient use of water for cultivation of crops;
- ❖ Irrigation Water saving by 40% to 80% on farmers' fields;
- ❖ Subsidy @80% being provided to farmers opting for micro irrigation
- ❖ Additional 10% subsidy for SF/MF/SC/Women farmers
- ❖ Annual Action Plan 2019-20 is Rs. 20.00 cr with physical target of 2145 hectares under ongoing PMKSY and RIDF-20 schemes.
- ❖ For promotion of Micro Irrigation on field crops, a pilot programme launched recently on cotton and maize crop. Approx 200 acres of cotton crop and 450 acres of maize crop covered under programme.
- ❖ A new project is being proposed to NABARD for approval under RIDF-25.

### **Horticulture**

Horticulture, being high value segment of agriculture needs special emphasis in the policy framework. With only 4.61% of total cropped area, horticulture crops are

contributing approx. 12.05% GDP to the total agriculture produce. Presently, area under horticulture crops is nearly 3.63 lakh ha with the total annual production of 69.54 lakh MT (2017-18).

To boost the horticulture production for providing better livelihood and nutritional security to the people of the state inline with identified Sustainable Development Goals 2 the following issues will be focussed:

1. Protected cultivation of vegetables under low cost net houses will be promoted.
2. Horticulture crops will be promoted in their Natural Growing Areas by establishing estates where world class facilities along with technical knowhow will be provided under single roof.
3. To reduce the over exploitation of water and for better fertilizer response, drip fertigation technology will be standardized and promoted for horticultural crops.
4. For the application of need based fertilizers, infrastructure like soil and leaf testing laboratories with the world class equipments will be established.
5. Infrastructure will be created for the production of quality and disease-free planting material through conventional and tissue culture techniques.
6. More emphasis will be given to evolve high yielding and processable varieties. Work on root stocks of different fruits need to be strengthened for tolerance to various biotic and abiotic stresses.
7. For the production of certified seed potato, infrastructure like tissue culture laboratories and Aeroponic units will be established.
8. Ancillary horticulture activities like beekeeping, mushroom cultivation and sericulture will be promoted.

Other important issues need to be focussed to meet the Sustainable Development Goal

- i. Peri-urban cultivation of vegetables will be promoted by providing necessary support on infrastructure.
- ii. Technologies to deliver regular advisories to the farmers like weather forecast, fertilizers/spray schedules etc. will be developed.
- m. Organic farming in horticulture will be promoted.

#### IV. Provision of funds for the promotion of Self Help Groups.

To combat the effect of climate change by increasing green cover through horticulture inline with identified **Sustainable Development Goal 13** the following issues will be focussed:

- This department is purely extension oriented and implementing the latest horticultural techniques and ideas through well qualified technical staff. To meet the targets of this goal, the department will guide/help farmers to adopt horticulture than traditional agriculture to mitigate the adversities of climate change.
- The department will also provide latest technical know-how to farmers through camps/trainings as well as media. With the effort of highly experienced & dedicated staff at field level, area under horticulture in Punjab state will increase area from 3.81 lakh ha to 5.59 lakh ha upto 2030. Detail is annexed in annexure 1.
- Adapting the horticultural production systems as horticulture sector will considerably contribute to the adverse impacts of climate change.
- By increasing area under horticulture the emission of green house gases will either be reduced or sequestered.

- The improved crop management practices like drip/micro irrigation will considerably reduce the emission of green house gasses due to reduced dependence on energy needs and intensification of perennial horticultural crops will help in sequestering carbon dioxide from the atmosphere .
- The carbon credits could be earned under the clean development mechanism . The horticultural waste will be composted locally instead of dumping in the landfills, which can reduce the release of methane that is involved in global warming.
- To achieve this end, efforts must be initiated at national and agro-ecological region level to assess the impact of climate change on different horticultural crops and to develop combinations of adaptation options for horticulture sector as a whole in an integrated manner to tackle the impacts of climate change.
- It also requires new financing to address the needs in terms of investments and research and to enable the farmers to overcome barriers to adopt horticulture as a whole.

## **5. DETAILS OF THE PLANNED INTERVENTIONS, SCHEMES AND PROJECTS WITH INDICATORS.**

To achieve the targets the department shall be running following schemes:-

### **5.1 Department of Agriculture & Farmers Welfare**

1. Rashtriya Krishi Vikas Yojana (RKVY)
2. National Food Security Mission (NFSM)
3. Support to State Extension Programme
4. National Mission for Sustainable Agriculture (Soil Health Management )
5. National Mission on Agriculture Extension and Technology
6. Promotion of Agriculture Mechanization for In Situ Management of Crop Residue Under Sub Mission on Agriculture Mechanization. 100% GOI Funded
7. Provision for Research and Development Scheme of P.A.U. Ludhiana
8. Debt Relief to Farmers/ Landless Labourers/Suicide Affected Families of Farmers
9. Punjab State Farmers and Farm Workers Commission
10. Paramparagat Krishi Vikas Yojana(PKVY)
11. Sub Mission on Agriculture Mechanization (SMAM)

### **Soil Conservation**

S. No.	Scheme/ Project/ Intervention
1	Project for utilization of treated water for irrigation from Sewage Treatment Plants in Punjab (NABARD-RIDF-25)
2	Project for alternate source of irrigation by utilizing treated water for irrigation from Sewage Treatment Plants (STPs) under CSS Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)
3	Project for alternate source of irrigation by utilizing treated water of Sewage Treatment Plants in Punjab (NABARD-RIDF-27)
4	Scheme for providing assured irrigation water to the waterlogged areas in the south western district (NABARD-RIDF-21)
5	Project for laying of Underground Pipeline for Conveyance of irrigation water in canal commands in 11 districts of Punjab (NABARD-RIDF-22)
6	CSS Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)
7	Project for promotion of judicious use of irrigation water in farming in Punjab (NABARD-RIDF-26)
8	Project for Promotion of Micro Irrigation in Punjab (NABARD-RIDF-20)
9	CSS on Micro Irrigation under PMKSY
10	Project for Promotion of Intelligent Irrigation in Punjab (NABARD-RIDF-25)

### **Horticulture**

To promote horticulture in the state there is provision of financial assistance for different interventions like area expansion , protected cultivation , bee keeping, mushroom cultivation, sericulture and post harvest handling of horticulture produce through various subsidy schemes

1. MIDH (Mission for Integrated Development of Horticulture)
2. RKVY (Rashtriya Krishi Vikas Yojana)
3. Other state plan schemes.

## **6. KEY PERFORMANCE INDICATORS FOR KEY PERSONNEL.**

### **Agriculture & Farmers Welfare, Department**

As per sustainable Goals, the main indicators pertaining to Department of Agriculture & Farmers Welfare Department relating to Goal No.1,2 , 8 and 12 are as below.

Sr. No.	Key Functionary/ Key Performance Indicator	Strategic objective	KPI unit
	<b>Farm Loan Waiver</b>	To pull the farmer out of debt cycle	<b>persons ( in lac)</b>
	<b>Minimum Income Support of Rs 6000 per year for Small &amp; marginal farmers who have less than 2 Ha. Of land Holding .</b>	To reduce the proportion of men, women living in poverty	<b>persons ( in lac)</b>
	<b>Replacement of Wheat Seed</b>	Increase in Foodgrain Production	
	<b>Training of Farmers</b>	To abreast them with latest technology	No.

	<b>Issuance of Soil Health Cards</b>	To reduce use of pesticides and maintain soil fertility and reduce input cost	lac
	<b>Subsidy on Straw Management Machinery @50% to Individuals &amp; 80 to Farmers Groups and Custom Hiring centers.</b>	To improve Air Quality	No.
	<b>Establishment of Farm Machinery Banks for Custom Hiring centers</b>	To give the maximum Net Returns to the farmers by reducing Input Cost	No.
	<b>Establishment of Hi Tech High Productive Equipment Hub for Custom Hiring</b>		
	<b>Area under Organic Farming</b>	To maintain soil health and healthy lifestyle and pure environment and clean drinking water to the people of Punjab.	ha
	<b>Distribution of foundation/certified seeds at 50% cost of the seed of crops for production of certified/ quality seeds</b>	To maintain 100% Germination rate.	Qtls
	<b>Training on seed production and technology to the farmers.</b>		No. of villages
	<b>Reduction in use of Pesticides</b>	To improve soil health & reduce input costs	kg/ha
	<b>Reduction in use of Fertilizers (NPK)</b>		kg/ha

## Soil Conservation

Key Personnel entrusted to achieve targets are as follows:

1. Chief Conservator of Soils, Punjab, Chandigarh.
2. Conservator of Soils, Chandigarh (HQ), SAS Nagar, Jalandhar and Ferozepur.
3. Divisional Soil Conservation Officers, all districts of Punjab.

Key Performance parameters for key personnel are enclosed as **Annexure-3**.

## Horticulture

As per the directions of Niti Aayog, Department of Horticulture has prepared a development plan based on Key Performance Parameters (Targets) to achieve them.

Following are the Key Performance Parameters (KPP) are configured in the best possible way:

Horticulture Performance I

Horticulture Performance II

Horticulture Performance III

**Targets and Estimated achievements of KPP's inline with the National indicators of SDG's is annexed in Annexure 3.**

Sr. No.	Key Functionary/ Key	Strategic objective	KPI unit
1.	Additional area Under	To diversify the area under horticulture	In ha.
2.	Area under protected cultivation (hac.)	Protected cultivation of vegetables under low cost net houses will be promoted	In ha.
3.	Vegetable Seed Production	High quality disease free seed potato and other vegetable seeds will be produced	In qtls.
4.	Fruit Plants Production	Virus and disease free good quality fruit plants will be produced and supplied to the farmers	In No.
5.	Supply of Honey Bee Colonies annually	To increase the income of farmers, subsidiary occupation of horticulture will be promoted.	In No.

## 7. MONITORING OF PROGRESS

Monitoring of progress of all three departments will be done regularly at respective Directorate levels.

**Punjab Agricultural University****Four-year Strategic Plan for realizing Sustainable Development Goals**

Punjab Agricultural University (PAU) was established on October 17, 1962. On trifurcation of Punjab State in November 1966, Haryana Agricultural University was carved out of PAU by an Act of Parliament in February 1970. Later, in July 1970, Himachal Pradesh Krishi Vishvavidyalaya was established. In 2006, the College of Veterinary Science was upgraded to Guru Angad Dev Veterinary and Animal Sciences University (GADVASU) at Ludhiana. Modelled on the pattern of Land Grant Colleges of the USA, mandate of the University embraces a host of research, teaching and extension activities steered towards overall agricultural development of the region and improving rural livelihoods. It carries out its mandate through five constituent colleges. Main campus of the university is spread over 1222 acres and off-campus Regional Research Stations (8), Fruit Research Stations (3), and seed farms (4) spread over 4432 acres also generate significant output and cater to region-specific priorities and challenges. In addition, 33 Krishi Vigyan Kendras and Farm Advisory Service Centres help carry out extension mandate in different parts of the state. The university is known for its quality crop improvement programmes. Concerted research and extension activities of the PAU in collaboration with agriculture and other line departments have made the state contribute 35.5 per cent wheat and 31 per cent rice towards central food reserves of the country. Further, Punjab is producing 39% apiary honey of the country as a result of introduction and promotion of Italian honey bee and 10% mushrooms. The state has become a manufacturing hub of farm machinery. Forty two per cent of the agricultural machinery recommended by ICAR at National Level has been developed at PAU. Contribution of PAU to agricultural development of the country made it earn Sardar Patel Outstanding ICAR Institution Award during 2017 for the second time, first being in 1995.

**Vision and Mission**

Mission of Punjab Agricultural University is to become a premier agricultural university with quality teaching, research and extension programmes whose impact goes past not only state but country boundaries as well. It is committed to continuous improvement in agricultural and allied fields by developing quality manpower, providing relevant technological solutions piloting their field use and supporting other related activities. For achieving the stated mission, the earmarked goals include providing quality education in the areas of agriculture, agricultural engineering, community science and allied fields; undertake basic, applied and adaptive research to seek appropriate solutions to emerging problems in agriculture and develop relevant technologies to improve socio-economic conditions of the farming community; develop effective mechanisms for the transfer of technology to the farmers and agricultural organizations through different extension programmes with a view to improve agricultural productivity and economic condition of rural population. Since 1962, the University with its effective coordination with the state, development departments and



enterprising farmers coupled with appropriate government policies, has played a pivotal role in making Punjab state a bread basket of the Country. Now that the country has become self sufficient in food grains, the University has consistently expanded the focus of its efforts to address the issues of sustainability of agriculture, conservation agriculture, environmental conservation, social responsibility and human resource development in emerging areas. To ensure acceptable quality institutional products or services, the university has been maintaining its quality management system as per the requirements of International standards (ISO 9001: 2015).

### **Sectoral Sustainable Development Goals and Targets**

The broad objectives of research and extension programmes of the university running across the relevant SDGs are as under:

- To employ precise and rapid crop improvement methods aimed at developing high yielding, climate resilient and resource efficient varieties of food grain crops
- To address overarching objective of reducing groundwater footprint of agriculture through varietal, agronomic, micro-irrigation, rainwater harvesting and diversified cropping pattern approaches and to devise technologies for reclaiming and safe use of poor quality irrigation water.
- To expand focus on genetic and agronomic biofortification of staple cereal, pulses, vegetable and fruit crops
- To conserve, evaluate and share accessions of various field, vegetable and fruit crops, and forest and fruit trees.
- To upgrade plant protection measures especially non-chemical against emerging and co-evolving insect pests and pathogens.
- To foster research-based linkages with non-farm rural economy by providing quality raw inputs.
- To develop technologies for value addition and processing of farm produce and to expand adoption of these technologies through technical and entrepreneurial skill development modules and handholding in setting up of an enterprise.
- To enhance quality of soil and water resources by devising technologies aimed at complementing synthetic fertilizers with crop residues and biofertilizers and enhancing use efficiency by suitably modifying rate, source, time, and method of application.
- To strengthen research based marketing intelligence in order to help farmers realize better prices.

### **Present Status and Baseline Values of Indicators**

Punjab Agricultural University has developed and recommended a range of varieties and technologies towards meeting targets given under various goals. The present/ baseline status under the relevant targets is as under:

***Target 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous people, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and***

***inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment***

- A well developed breeding programme for improving productivity by developing new high yielding varieties with better nutritional traits and other enabling technologies.
- Quality seed multiplication programme for ensuring widespread permeation of new varieties
- There exist technologies for targeted and efficient use of natural and applied resources
- Many technologies have been developed that allow better income realization from subsidiary occupations like beekeeping and mushroom cultivation.

***Target 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality***

- A vast package of water saving technologies is in place which include drip irrigation-fertigation schedules for major crops and cropping systems, short duration varieties, direct seeded rice, rainwater harvesting, etc.
- Varieties and other technologies for managing various biotic and abiotic stresses have been developed.
- Various input saving technologies exist that include incorporation of genetic traits, devising non-chemical and improved agronomic best practices along with rainwater harvesting and cyclic or restricted use of poor quality irrigation water.
- Technologies for enhancing soil health through integrated nutrient management approaches with special focus on biofertilizers and in-field management of crop residues in order to obviate adverse effects of burning on soil and human health are available.
- The present status with respect to addressing GHG emissions involves eco-friendly management of crop residues, cropping systems based approaches, aerobic rice cultivation, biochar and mulch interventions.

***Target 2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed***

- Germplasm resources across all major crops (wild relatives of wheat, Brassica, chickpea, cotton, vegetable crops and rootstock & scion germplasm of citrus) are being maintained and updated continuously for enabling quality crop improvement programmes

***Target 6.3: By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally***

- Baseline status with respect to poor quality irrigation water management includes interventions involving restricted and cyclic use of poor quality irrigation water and countering adverse effects by using farm residues.
- Effects of sewage water irrigation and arsenic contaminated groundwater use on crops have been monitored.

***Target 8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value- added and labour intensive sectors***

- Insofar as baseline situation with respect to diversification is concerned, a net sown area of 4.13m ha is predominantly occupied by two crops, namely, rice (3.1m ha) and wheat (3.5m ha) only. The situation calls for sustaining agriculture in the region by diversifying towards maize, cotton, pulses, oilseeds, fruits and vegetables.
- Sufficient stock of improved varieties of potential candidate crops and their matching production-protection technologies is in place.

**Action Plan for achieving the targets (2019-2023)**

The university plans to achieve various relevant targets under sustainable development goals through the following crop- and domain-specific programmes. However, no single year can be ascribed individually to these targets as the gestation period of technologies borne out of agricultural research is generally long. There is an element of unforeseen situations in farm research ecosystem.

- In wheat, developing varieties with specific end uses, value addition through nutritional and nutraceutical properties for open market and export, development of disease resistant varieties and development of climate resilient system of wheat production
- In rice, developing very short duration varieties, refining transplanting schedule and adoption of efficient irrigation technologies and development of conservation and precision agriculture based agronomic practices.
- In Basmati, consolidation of genes for multiple biotic stress (brown plant hopper, neck blast and bacterial blight ) resistance for deriving higher yields.
- In maize, developing new long duration hybrids which offer prospects of yield enhancement by harnessing more sunshine and shifting grain filling to more favourable cooler period crop; inbred line development through doubled haploid technique, and identification and incorporation of genes for tolerance to drought and waterlogging
- In sugarcane, development of IPM and IDM modules for new diseases like *Pokkah boeng* and pests like root borer and white grub whose incidence is increasing; adapting and

refining sugarcane planters and whole cane combine harvesters for commercial use in the state; and refining and accelerating the sugarcane propagation system by integrating tissue culture as well as 'Single bud and bud chip nursery' in the seed cane chain to make available healthy, and high quality plantlets to the growers

- In cotton, developing germplasm for mechanical picking through transfer of monopodial bearing and other traits into commercial varieties; developing transgenic varieties in public sector including a strategy for pink boll worm resistance; incorporation of whitefly and leaf curl virus tolerant cotton varieties using transgenic and wide hybridization approaches; and development of prototypes of low cost machines for mechanical picking.
- Developing high yielding, dwarf, early maturing varieties of pigeonpea (Arhar) that are suitable for July planting and mechanical harvesting and accelerating transfer of pod borer resistance (*Maruca vitrata*, *Helicoverpa armigera*) from wild species into elite cultivars/lines.
- In mungbean and urdbean, accelerated breeding involving interspecific hybridization to enhance productivity of *Kharif* mungbean and urdbean by 15-20% and developing varieties suitable for mechanical harvesting.
- Introgression of new productivity enhancing and resistance (Ascochyta blight, Botrytis grey mould) genes from diverse sources (including wild species) and developing tall and erect type varieties of chickpea suitable for mechanical harvesting and development of green pod shelling machine prototypes for *chholia* purpose and investigating potential of *chholia* for freezing on pattern of frozen peas.
- In groundnut, accelerated breeding to develop short duration collar rot resistant varieties for *Kharif* season and for bold-seeded, confectionary type spring groundnut varieties with 85-90 days maturity, and development of high oleate (oleic acid > 80%) spring groundnut varieties for high oil quality and stability.
- In Canola sarson, developing hybrids of *Raya* for higher productivity and climate resilience. India's first canola quality *Raya* hybrid (first in both private and public sector) is likely to be released shortly; accelerated development of *Gobhi sarson* and *Raya* varieties/ hybrids having shattering resistance and determinate growth for mechanical harvesting.
- In fodder crops, high seed yielding varieties and parental lines of hybrids with synchronized flowering in sorghum; high biomass, late maturing, multi-cut varieties/hybrids of pearl millet for fodder; and stem rot resistant high biomass as well as high seed yielding varieties of berseem
- In potato, development of high yielding varieties suitable for processing (French fries/chips).
- Development of high yielding/processable monopicking varieties of pea and standardization of their agronomy
- Fine tuning of machines developed by PAU for sowing, transplanting, weeding, harvesting and grading for their large scale adoption in onion

- Development of improved varieties of tomato with better nutritional attributes (low oxalic acid, high carotenoids) and suitable for mechanical harvesting
- Development of short duration varieties/hybrids of chilli for dual cropping system, e.g. Chilli-Basmati rice (Presently chilli crop takes almost a year for its cultivation).
- Refinement of machines developed for various operations in garlic planting, weeding, harvesting, bulb breaking and grading for their wider adoption
- Accelerating ongoing transfer of hull less character in pumpkin from *Cucumis pepo* (summer squash or *Chapan Kaddu*) to *C. moschata* (*Halwa Kaddu*) with the objective of more seeds per fruit.
- Identification of rootstocks tolerant to biotic (greening, tristeza, exocortis, gummosis/root-rot) and abiotic (salt and drought) stresses from the large number of available (generated) cross bred material of Kinnow and development of IPM module requiring lesser use of pesticides (based on oil coatings, plant extracts, intercropping, etc.) for residue and blemish free fruit production
- Evaluation and development of varieties/ hybrids of guava having coloured skin, flesh with soft seeds and better shelf life; and strengthening eco-friendly management practices to make rainy season crop profitable
- Identification and development of dwarfing rootstocks of pear and optimization of high density planting.
- Development of coloured varieties of peach having better shelf life, suitable for table and processing purpose; and rootstocks resistant to nematodes and high pH.
- Optimization of canopy management techniques to restore productive potential of senile orchards of litchi
- Evaluation/ development of varieties of grapes having tolerance to pre-monsoon rains and identification of varieties suitable for protected conditions
- In agroforestry, introduction/development of poplar germplasm having fast growth, drought tolerance, superior plywood and processed wood quality; development of hybrid clones of poplar and eucalyptus having specific traits such as fast growth, tolerance to insect-pest/disease, salinity and water logging; and development of Burma *Dek* varieties/clones having fast growth and quality timber
- Molecular tagging and marker assisted selection of traits of economic importance in field and horticultural crops at a breeding scale; strengthening of recent strategies like CRISPR/Cas9 based genome editing, and combining molecular tools with accelerated breeding based on doubled haploids, marker assisted backcross breeding and speed breeding methodologies
- Plant health management research will focus on protecting the crop plants from various diseases and insect pests through development of climate resilient IDM/IPM modules and weather-based forewarning systems.
- Devising rapid methods for assaying soil physical and chemical properties to develop soil fertility maps and target remedial measure finely and developing and updating judicious and balanced fertilizer use regimes in different cropping systems and soil types.

- Fine tuning microbial *in-situ* decomposition of paddy and wheat straw.
- Refinement of drip fertigation regimes for all major crops and integration with sensor based delivery of nutrients and irrigation.
- Precision application of nutrients with respect to spatial variability in soils through tractor mounted sensors and dispensers.
- Soil organic carbon enhancement by fine-tuning of agronomic practices
- Strategies for minimizing soil emissions of greenhouse gases through choice of crops, agronomic practices and fertilizer schedules.
- Strengthening of beekeeping and mushroom cultivation research by bee breeding and identification of new mushroom species
- Micro irrigation coupled with solar energy for different crops and cultivation conditions: There is a need to shift from conventional flood irrigation systems to drip irrigation, in case of not only high value crops but also field crops. Drip irrigation and fertigation regimes need to be worked out for all these crops.
- Soilless cultivation of crops in protected environment using hydroponics and aeroponics would be standardized across a broad spectrum of crops.
- Further refinement and integration of remote sensing devices in various farm operations to increase accuracy of monitoring and remedial measures.
- Identification of suitable crops and varieties for urban and peri-urban horticulture systems.
- Use of ICT, IoT tools and robotics for future precision agriculture systems.
- Preparation of comprehensive data sets on various agricultural commodities and commodity groups regarding production, consumption, prices, internal trade, imports, exports, quality, and other relevant parameters at the state, national and international levels.
- Preparation of medium to long-term market outlook for various agricultural commodities and commodity groups concerning production, quality, demand, and prices.
- Identification of innovative agricultural marketing models to enhance the gains from agricultural production to improve livelihood and resource sustainability

The technologies developed during the period will be validated, as per need, for their adaptation in different parts of the state and will be extended to various stakeholders eventually through various targeted extension activities.

**Key functionaries:** 1. Director of Research, PAU Ludhiana 2. Director of Extension Education, PAU Ludhiana

**Sustainable Development Goals, 4-year Strategic Action Plan (2019-23)**

Annexure- 1

Name of the Department:															
Sr. No.	Sustainable Development Goal/ Target	Indicator	Indicator Unit	Baseline		Targets					Achievement				
				Year	Value	2019-20	2020-21	2021-22	2022-23	Year - 2030	2019-20	2020-21	2021-22	2022-23	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
<b>Goal-1 : End poverty in all its forms everywhere</b>															
1	1	1.1 By 2030, eradicate extreme poverty for all people everywhere,	SI 1.1.1 Farm Loan Waiver	persons No. in lac	2018-19	5.52	1.14	0	0	0	0				
	2	1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	SI 1.2.1 Paradhan Mantri Kisan Samman Nidhi Yojana	persons No. in lac	2018-19	18.92	25.00	25.00	25.00	25.00	*				
<b>Goal-2 : End hunger, achieve food security and improved nutrition and promote sustainable agriculture</b>															
2	1	2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.	SI 2.3.1 Replacement of Wheat Seed	Qtl	2018-19	177000	225000	225000	225000	225000	225000				
			SI 2.3.2 Training of farmers	No.	2018-19	100000	110000	120000	125000	125000	125000				
			SI 2.3.3 Production of Horticultural Crops (fruits, vegetables,flowers) as horticulture crops provide better livelihood & Security.	lac M.T	2018-19	73.28	75.78	75.53	81.50	84.78	107.53				
	2	2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality	SI 2.4.1 Issuance of Soil Health Cards	No.	2018-19	526000	339886	339886	339886	339886	4078632				
			SI 2.4.2 Area under organic Farming	ha.	2018-19	5000	6000	6000	6000	6000	72000				
			SI 2.4.3 Subsidy on Staw Management Machinery@50% to Individuals & 80 to Farmers Groups and Custom Hiring centers.	No.	2018-19	28609	44177	10600	*	*	*				
			SI 2.4.4 Establishment of Farm Machinery Banks for Custom Hiring	No.	2018-19	92	250	200	200	200	2550				
			SI 2.4.5 Establishment of Hi Tech High Productive Equipment Hub for Custom Hiring	No.	2018-19	3	12	12	12	12	135				
			SI 2.4.6 Procurement of Agriculture Machinery & Equipment	No.	2018-19	3660	11168	3000	3000	3000	45000				
			SI 2.4.7 Farm Machinery Banks in Selected Villages	No.	2018-19	43	160	80	80	80	900				
3	2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed	SI 2.5.1 Distribution of foundation/certified seeds at 50% cost of the seed of crops for production of certified/quality seeds	Qtl	2018-19	0	900	1200	1590	1800	2100					
		SI 2.5.2 Training on seed production and technology to the farmers.	No. of Villages	2018-19	0	290	290	290	290	550					
4	2.a Increase investment, including through enhanced international cooperation, in rural infrastructure,agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries	SI 2.a.1 Research and Development activities undertaken by P.A.U Ludhiana	As per Annexure-A												

**Sustainable Development Goals, 4-year Strategic Action Plan (2019-23)**

Annexure- 1

Name of the Department:														
Sr. No.	Sustainable Development Goal/ Target	Indicator	Indicator Unit	Baseline		Targets					Achievement			
				Year	Value	2019-20	2020-21	2021-22	2022-23	Year - 2030	2019-20	2020-21	2021-22	2022-23
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
3	<b>Soil and Water Conservation, Punjab</b>													
	<b>Goal-6: Ensure availability and sustainable management of water and sanitation for all</b>													
	1	6.3 : By 2030, improve water quality by reducing pollution and substantially increasing recycling and safe reuse globally	SI 6.3.1: Use of treated water from Sewerage Treatment Plants (STP's) for irrigation	Irrigated Area in ha.	2018-19	6386	12261	15327	18392	15327	251614			
2	6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity in irrigation sector	SI 6.4.1 : Promotion of Underground Pipeline System for on-farm conservation of irrigation water	Irrigated Area in ha.	2018-19	494083	7742	9678	11613	9678	648927				
		SI 6.4.2 : Promotion of Micro Irrigation to increase water use efficiency in irrigation	Irrigated Area in ha.	2018-19	33710	2145	2682	3218	2682	76618				

**Note:- Targets subject to continuation of the Scheme and release of funds by GOI and State Govt. in the successive years.**



**Sustainable Development Goals, 4-year Strategic Action Plan (2019-23)**

Annexure- 1

Name of the Department:															
Sr. No.	Sustainable Development Goal/ Target	Indicator	Indicator Unit	Baseline		Targets					Achievement				
				Year	Value	2019-20	2020-21	2021-22	2022-23	Year - 2030	2019-20	2020-21	2021-22	2022-23	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
4	<b>Goal-8: Promote sustained, inclusive and sustainable Economic growth, full and productive employment and decent work for all</b>														
	1	8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value- added and labour intensive sectors	<b>Area to be Shifted</b>												
			SI 8.2.1 Area to be Shifted from Paddy	ha.	2017-18	2519000	2308000	2179700	2081000	1918000	1528000				
			SI 8.2.2 Area to be Shifted to Maize	ha.	2017-18	114000	200000	250000	300000	350000	600000				
			SI 8.2.3 Area to be Shifted to Cotton	ha.	2017-18	291000	400000	465000	500000	600000	700000				
			SI 8.2.4 Area to be Shifted to Basmati	ha.	2017-18	546000	560000	570000	580000	590000	620000				
		SI 8.2.5 Area to be Shifted to Pulses	ha.	2017-18	28000	30000	33300	37000	40000	50000					
5	<b>Goal-12: Ensure sustainable consumption and production Patterns</b>														
	1	12.1 Implement the 10-year Framework of Programmes on Sustainable Consumption and Production Patterns, all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	SI 12.1.1 Foodgrain Production	000' MT	2018-19	29336	30000	30500	31000	31500	32500				
	2	12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment	SI 12.4.1 Reduction in use of Pesticides	kg/ha	2017-18	0.817	0.750	0.730	0.715	0.700	0.675				
			SI 12.4.2 Reduction in use of Fertilizers (NPK)	kg/ha	2017-18	212	210	208	207	201	195				
6	<b>Goal 13 : Take urgent action to combat climate change and its impacts</b>														
	1	13.b Promote mechanisms for raising capacity for effective climate change-related planning and management in Punjab state	SI 13.b.1 To combat the effect of climate change by increasing green cover through horticulture.	lakh hac.	2018-19	3.81	3.97	4.13	4.29	4.47	5.59				

Note:- The achievements against targets are subject to the following Conditions:- 1) Release of funds under various schemes by GOI and State Govt. 2) The use of pesticides depends upon the incidence of pests.

\* Targets under Goal 1 Parameter 1(b) for 2020-21 onwards subject to continuation of the Scheme and release of funds by GOI in the successive years.

Sustainable Development Goals, 4-year Strategic Action Plan (2019-23)													Annexure- 2			
Name of the Department:		Department of Agriculture & Farmers Welfare, Punjab														
Sr. No.	Scheme/Project/ Intervention	Expected expenditure	Indicator	Unit	Baseline Year	Baseline value	Indicator Targets					Achievement				
							2019-20	2020-21	2021-22	2022-23	FY 2030	2019-20	2020-21	2021-22	2022-23	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	Debt Relief to Farmers/ Landless Labourers/Suicide Affected Families of Farmers	3000.00	Farm Loan Waiver	persons (in lac)	2018-19	5.52	1.14	0	0	0	0					
2	Paradhan Mantri Kisan Samman Nidhi Yojana	1020.00	Minimum Income Support of Rs 6000 per year for Small & marginal farmers who have less than 2 Ha. Of land Holding .	persons (in lac)	2018-19	18.92	25.00	25.00	25.00	25.00	*					
3	Rashtriya Krishi Vikas Yojana	60.00	Replacement of Wheat Seed in Ten Districts	Qtl	2018-19	49000	75000	75000	75000	75000	75000					
4	National Food Security Mission	72.00	Replacement of Wheat Seed in Twelve Districts	Qtl	2018-19	128000	150000	150000	150000	150000	150000					
5	Support to State Extension Programme	94.00	Training of farmers	No.	2018-19	100000	110000	120000	125000	125000	125000					
6	National Mission for Sustainable Agriculture ( Soil Health Management )	12.00	Issuance of Soil Health Cards	No.	2018-19	526000	339886	339886	339886	339886	4078632					
7	Paramparagat Krishi Vikas Yojana (PKVY)	40.80	Area under Organic Farming	ha.	2018-19	5000	6000	6000	6000	6000	72000					
8	Promotion of Agriculture Mechanization for In Situ Management of Crop Residue Under Sub Mission on Agriculture Mechanization. 100% GOI Funded (Direct release)	515.66	Subsidy on Staw Management Machinery@50% to Individuals & 80 to Farmers Groups and Custom Hiring centers.	No.	2018-19	28609	44177	10600	*	*	*					
9	Sub Mission on Agriculture Mechanization (SMAM)	255.74	Establishment of Farm Machinery Banks for Custom Hiring centers	No.	2018-19	92	250	200	200	200	2550					
			Establishment of Hi Tech High Productive Equipment Hub for Custom Hiring	No.	2018-19	3	12	12	12	12	135					
			Procurement of Agriculture Machinery & Equipment	No.	2018-19	3660	11168	3000	3000	3000	45000					
			Farm Machinery Banks in Selected Villages	No.	2018-19	43	160	80	80	80	900					
10	National Mission on Agriculture Extension and Technology (Seed Village scheme)	270.00	Distribution of foundation/certified seeds at 50% cost of the seed of crops for production of certified/ quality seeds	Qtl	2018-19	0	900	1200	1590	1800	2100					
		1.60	Training on seed production and technology to the farmers.	No. of Villages	2018-19	0	290	290	290	290	550					

\* Indicator Targets under Sr. No 2 for 2020-21 onwards subject to continuation of the Scheme and release of funds by GOI in the successive years.

## Sustainable Development Goals, 4-year Strategic Action Plan (2019-23)

Annexure- 2

Name of Department : Department of Horticulture.

Annexure-2

Sr. No	Scheme/Project/Intervention	Expected expenditure	Indicator	Unit	Baseline		Targets				Year 2030	Achievement (estimated)			
					Year	Value	2019-20	2020-21	2021-22	2022-23		2019-20	2020-21	2021-22	2022-23
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Centrally sponsored scheme(MIDH/RKVY) and state plan schemes	Average Rs.15.00 crore per annum for 5000ha. Under fruit plantation	Production of Horticultural crops (fruits, vegetables, flowers) as horticulture crops provides better livelihood and nutritional security.	lakh. M.T.	2018-19	73.28	75.78	75.53	81.50	84.78	107.53				
2			To combat the effect of climate change by increasing green cover through horticulture.	lakh hac.	2018-19	3.81	3.97	4.13	4.29	4.47	5.59				

**Sustainable Development Goals, 4-year Strategic Action Plan (2019-23)**

**Annexure- 2**

Name of the Department:		Department of Soil and Water Conservation, Punjab														
Sr. No.	Scheme/Project/ Intervention	Expected Expenditure (Rs)	Indicator	Unit	Baseline Year	Baseline value	Indicator Targets					Achievement				
							2019-20	2020-21	2021-22	2022-23	FY 2030	2019-20	2020-21	2021-22	2022-23	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
1	Project for utilization of treated water for irrigation from Sewage Treatment Plants in Punjab (NABARD-RIDF-25)	94.49	6.3.2: Use of treated water from Sewerage Treatment Plants (STP's) for irrigation	Irrigated Area in ha.	2018-19	6386	2625	3281	3937	3281	39372					
2	Project for alternate source of irrigation by utilizing treated water for irrigation from Sewage Treatment Plants (STPs) under CSS Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)	77.00		Irrigated Area in ha.			2139	2674	3208	2674	32085					
3	Project for alternate source of irrigation by utilizing treated water of Sewage Treatment Plants in Punjab (NABARD-RIDF-27)	269.91		Irrigated Area in ha.			7498	9372	11246	9372	112464					
4	Scheme for providing assured irrigation water to the waterlogged areas in the south western district (NABARD-RIDF-21)	21.60	6.4.2 : Promotion of Underground Pipeline System for on-farm conservation of irrigation water	Irrigated Area in ha.	2018-19	494083	547	684	820	684	8205					
5	Project for laying of Underground Pipeline for Conveyance of irrigation water in canal commands in 11 districts of Punjab (NABARD-RIDF-22)	84.21		Irrigated Area in ha.			2132	2665	3198	2665	31980					
6	CSS Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)	100.00		Irrigated Area in ha.			2532	3165	3797	3165	37977					
7	Project for promotion of judicious use of irrigation water in farming in Punjab (NABARD-RIDF-26)	100.00		Irrigated Area in ha.			2532	3165	3797	3165	37977					
8	Project for Promotion of Micro Irrigation in Punjab (NABARD-RIDF-20)	22.39	6.4.3 : Promotion of Micro Irrigation to increase water use efficiency in irrigation	Irrigated Area in ha.	2018-19	33710	373	467	560	467	5601					
9	CSS on Micro Irrigation under PMKSY	33.32		Irrigated Area in ha.			555	694	833	694	8328					
10	Project for Promotion of Intelligent Irrigation in Punjab (NABARD-RIDF-25)	73.00		Irrigated Area in ha.			1217	1521	1825	1521	18252					

**Note:- Indicator Targets subject to continuation of the Scheme and release of funds by GOI and State Govt. in the successive years.**

Sustainable Development Goals, 4-year Strategic Action Plan (2019-23)													
Key Performance Parameters for Key Personnel													
Name of Department : Agriculture & Farmers Welfare,Punjab										Annexure-3			
Sr. No.	Goal No.	Key Functionary/ Key Performance Parameters	KPP Unit	Targets					Achievement				Remarks
				2019-20	2020-21	2021-22	2022-23	2030 target	2019-20	2020-21	2021-22	2022-23	
Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab 3. Chief Agiculture Officers 4. Agriculture Officers 5. Agriculture Development Officers													
1	1.1	Farm Loan Waiver	persons	113796	0	0	0	0					
<b>Responsibility of various officers as per the targets fixed:</b>													
1)	Amritsar			4870	0	0	0	0					
2)	Barnala			6200	0	0	0	0					
3)	Bathinda			8769	0	0	0	0					
4)	Faridkot			3197	0	0	0	0					
5)	Fatehgarh Sahib			3075	0	0	0	0					
6)	Fazilka			4389	0	0	0	0					
7)	Ferozepur			3922	0	0	0	0					
8)	Gurdaspur			3405	0	0	0	0					
9)	Hoshiarpur			4309	0	0	0	0					
10)	Jalandhar			4743	0	0	0	0					
11)	Kapurthala			2563	0	0	0	0					
12)	Ludhiana			10668	0	0	0	0					
13)	Mansa			5562	0	0	0	0					
14)	Moga			8709	0	0	0	0					
15)	Pathankot			812	0	0	0	0					
16)	Patiala			8392	0	0	0	0					
17)	Rupnagar			3784	0	0	0	0					
18)	S.A.S. Nagar			2040	0	0	0	0					
19)	Sangrur			13466	0	0	0	0					
20)	Shaheed Bhagat Singh Nagar			3378	0	0	0	0					
21)	Si Mukatsar Sahib			3570	0	0	0	0					
22)	Tarantaran			3973	0	0	0	0					
<b>Total</b>				<b>113796</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>					

Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers												
2	1.2	Minimum Income Support of Rs 6000 per year for Small & marginal farmers who have less than 2 Ha. Of land Holding .	persons ( in No.)	2,500,000	2,500,000	2,500,000	2,500,000	*				
<b>Responsibility of various officers as per the targets fixed:</b>												
1)	Amritsar			100457	100457	100457	100457	0				
2)	Barnala			66520	66520	66520	66520	0				
3)	Bathinda			123987	123987	123987	123987	0				
4)	Faridkot			43603	43603	43603	43603	0				
5)	Fatehgarh Sahib			34657	34657	34657	34657	0				
6)	Fazilka			164992	164992	164992	164992	0				
7)	Ferozepur			132749	132749	132749	132749	0				
8)	Gurdaspur			147860	147860	147860	147860	0				
9)	Hoshiarpur			104061	104061	104061	104061	0				
10)	Jalandhar			56844	56844	56844	56844	0				
11)	Kapurthala			34376	34376	34376	34376	0				
12)	Ludhiana			94784	94784	94784	94784	0				
13)	Mansa			96555	96555	96555	96555	0				
14)	Moga			72935	72935	72935	72935	0				
15)	Pathankot			27147	27147	27147	27147	0				
16)	Patiala			125400	125400	125400	125400	0				
17)	Rupnagar			58283	58283	58283	58283	0				
18)	S.A.S. Nagar			35571	35571	35571	35571	0				
19)	Sangrur			149733	149733	149733	149733	0				
20)	Shaheed Bhagat Singh Nagar			35604	35604	35604	35604	0				
21)	Si Mukatsar Sahib			73721	73721	73721	73721	0				
22)	Tarantaran			112775	112775	112775	112775	0				
		<b>Total</b>		<b>1892614</b>	<b>1892614</b>	<b>1892614</b>	<b>1892614</b>	<b>0</b>				

It is proposed to provide Minimum Income support to 25.00 lac Small & marginal farmers under Paradhan Mantri Kisan Samman Nidhi Yojana. However till date 18.92 lac farmers have been identified . For the remaining the process of identification is still going on and will be completed shortly.

Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (HYVP)												
3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers												
3	2.3	Replacement of Wheat Seed	Qtls	225000	225000	225000	225000	225000				
<b>Responsibility of various officers as per the targets fixed:</b>												
1)	Amritsar			9300	9300	9300	9300	9300				
2)	Barnala			9000	9000	9000	9000	9000				
3)	Bathinda			9750	9750	9750	9750	9750				
4)	Faridkot			9000	9000	9000	9000	9000				
5)	Fatehgarh Sahib			7500	7500	7500	7500	7500				
6)	Fazilka			7100	7100	7100	7100	7100				
7)	Ferozepur			8000	8000	8000	8000	8000				
8)	Gurdaspur			7100	7100	7100	7100	7100				
9)	Hoshiarpur			6650	6650	6650	6650	6650				
10)	Jalandhar			6650	6650	6650	6650	6650				
11)	Kapurthala			4430	4430	4430	4430	4430				
12)	Ludhiana			24000	24000	24000	24000	24000				
13)	Mansa			15000	15000	15000	15000	15000				
14)	Moga			15000	15000	15000	15000	15000				
15)	Pathankot			2680	2680	2680	2680	2680				
16)	Patiala			19500	19500	19500	19500	19500				
17)	Roopnagar			2680	2680	2680	2680	2680				
18)	S.A.S. Nagar			2680	2680	2680	2680	2680				
19)	S.B.S. Nagar			7500	7500	7500	7500	7500				
20)	Sangrur			24750	24750	24750	24750	24750				
21)	Sri Muktsar sahib			18750	18750	18750	18750	18750				
22)	Tarn Taran			7980	7980	7980	7980	7980				
	<b>Total</b>			<b>225000</b>	<b>225000</b>	<b>225000</b>	<b>225000</b>	<b>225000</b>				

Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2..Joint Director Agriculture & Farmers Welfare,Punjab (E&T) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers										
4	2.3	Training of Farmers	No.	110000	120000	125000	125000	125000		
<b>Responsibility of various officers as per the targets fixed:</b>										
1)	Amritsar			7580	8270	8620	8620	8620		
2)	Barnala			2277	2484	2586	2586	2586		
3)	Bathinda			6064	6616	6896	6896	6896		
4)	Faridkot			1518	1654	1724	1724	1724		
5)	Fatehgarh Sahib			3795	4140	4310	4310	4310		
6)	Fazilka			3032	3312	3448	3448	3448		
7)	Ferozepur			4554	4968	5172	5172	5172		
8)	Gurdaspur			8349	9097	9482	9482	9482		
9)	Hoshiarpur			7590	8280	8620	8620	8620		
10)	Jalandhar			7580	8280	8630	8630	8630		
11)	Kapurthala			3795	4140	4310	4310	4310		
12)	Ludhiana			8349	9097	9482	9482	9482		
13)	Mansa			3795	4140	4310	4310	4310		
14)	Moga			3795	4140	4310	4310	4310		
15)	Pathankot			4548	4962	5172	5172	5172		
16)	Patiala			6064	6624	6896	6896	6896		
17)	Roopnagar			3795	4140	4310	4310	4310		
18)	S.A.S. Nagar			2277	2481	2586	2586	2586		
19)	S.B.S. Nagar			3795	4140	4310	4310	4310		
20)	Sangrur			7590	8280	8620	8620	8620		
21)	Sri Muktsar sahib			3036	3312	3448	3448	3448		
22)	Tarn Taran			6822	7443	7758	7758	7758		
<b>Total</b>				<b>110000</b>	<b>120000</b>	<b>125000</b>	<b>125000</b>	<b>125000</b>		



Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (Inputs)

3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers

5	2.4	Issuance of Soil Health Cards	No.	339886	339886	339886	339886	4078632					
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Responsibility of various officers as per the targets fixed:

1)	Amritsar	19500	19500	19500	19500	234000				
2)	Barnala	12200	12200	12200	12200	146400				
3)	Bathinda	22560	22560	22560	22560	270720				
4)	Faridkot	12100	12100	12100	12100	145200				
5)	Fatehgarh Sahib	8560	8560	8560	8560	102720				
6)	Fazilka	19584	19584	19584	19584	235008				
7)	Ferozepur	16120	16120	16120	16120	193440				
8)	Gurdaspur	19500	19500	19500	19500	234000				
9)	Hoshiarpur	18500	18500	18500	18500	222000				
10)	Jalandhar	16720	16720	16720	16720	200640				
11)	Kapurthala	12100	12100	12100	12100	145200				
12)	Ludhiana	23072	23072	23072	23072	276864				
13)	Mansa	14584	14584	14584	14584	175008				
14)	Moga	15432	15432	15432	15432	185184				
15)	Pathankot	6500	6500	6500	6500	78000				
16)	Patiala	20344	20344	20344	20344	244128				
17)	Roopnagar	8500	8500	8500	8500	102000				
18)	S.A.S. Nagar	6000	6000	6000	6000	72000				
19)	S.B.S. Nagar	8500	8500	8500	8500	102000				
20)	Sangrur	25248	25248	25248	25248	302976				
21)	Sri Muktsar sahib	18112	18112	18112	18112	217344				
22)	Tarn Taran	16150	16150	16150	16150	193800				
	<b>Total</b>	<b>339886</b>	<b>339886</b>	<b>339886</b>	<b>339886</b>	<b>4078632</b>				



**Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (Engg.) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers**

7	2.4	Establishment of Farm Machinery Banks for Custom Hiring centers	No.	250	200	200	200	2550					
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**Responsibility of various officers as per the targets fixed:**

1	Amritsar	12	10	10	10	125					
2	Barnala	15	10	10	10	125					
3	Bathinda	16	10	10	10	125					
4	Faridkot	12	10	10	10	125					
5	Fatehgarh Sahib	6	5	5	5	65					
6	Fazilka	12	10	10	10	130					
7	Ferozepur	12	10	10	10	130					
8	Gurdaspur	12	10	10	10	130					
9	Hoshiarpur	12	10	10	10	130					
10	Jalandhar	12	10	10	10	130					
11	Kapurthala	12	10	10	10	130					
12	Ludhiana	12	10	10	10	130					
13	Mansa	14	12	12	12	150					
14	Moga	14	12	12	12	150					
15	Pathankot	2	2	2	2	26					
16	Patiala	15	11	11	11	140					
14	Roopnagar	12	10	10	10	130					
18	S.A.S. Nagar	2	2	2	2	26					
19	S.B.S. Nagar	2	2	2	2	26					
20	Sangrur	18	14	14	14	177					
21	Sri Muktsar sahib	16	12	12	12	150					
22	Tarn Taran	10	8	8	8	100					
	<b>Total</b>	<b>250</b>	<b>200</b>	<b>200</b>	<b>200</b>	<b>2550</b>					

**Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2..Joint Director Agriculture & Farmers Welfare,Punjab (Engg.) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers**

8	2.4	Establishment of Hi Tech High Productive Equipment Hub for Custom Hiring	No.	12	12	12	12	135					
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**Responsibility of various officers as per the targets fixed:**

1)	Amritsar	0	1	0	1	7						
2)	Barnala	0	0	2	0	6						
3)	Bathinda	1	0	1	1	6						
4)	Faridkot	0	1	1	0	6						
5)	Fatehgarh Sahib	0	1	1	0	6						
6)	Fazilka	2	0	0	1	6						
7)	Ferozepur	1	0	0	1	6						
8)	Gurdaspur	0	1	0		6						
9)	Hoshiarpur	0	1	0	1	6						
10)	Jalandhar	1	0	0	1	7						
11)	Kapurthala	1	0	0	1	6						
12)	Ludhiana	1	0	0	1	7						
13)	Mansa	0	1	0	1	6						
14)	Moga	0	1	0	1	6						
15)	Pathankot	0	1	0	1	6						
16)	Patiala	1	0	1	0	6						
17)	Roopnagar	0	0	1	1	6						
18)	S.A.S. Nagar	0	1	1	0	6						
19)	S.B.S. Nagar	0	1	1	0	6						
20)	Sangrur	2	0	1	0	6						
21)	Sri Muktsar sahib	2	1	1	0	6						
22)	Tarn Taran	0	1	1	0	6						
<b>Total</b>		<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>135</b>						

**Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (Engg.) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers**

9	2.4	Procurement of Agriculture Machinery & Equipment	No.	11168	3000	3000	3000	45000					
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**Responsibility of various officers as per the targets fixed:**

1)	Amritsar	590	127	127	127	1905					
2)	Barnala	550	133	133	133	1995					
3)	Bathinda	598	159	159	159	2385					
4)	Faridkot	610	133	133	133	1995					
5)	Fatehgarh Sahib	440	137	137	137	2055					
6)	Fazilka	570	159	159	159	2385					
7)	Ferozepur	610	168	168	168	2520					
8)	Gurdaspur	500	137	137	137	2055					
9)	Hoshiarpur	510	140	140	140	2100					
10)	Jalandhar	530	164	164	164	2460					
11)	Kapurthala	500	167	167	167	2500					
12)	Ludhiana	520	173	173	173	2595					
13)	Mansa	660	164	164	164	2460					
14)	Moga	620	158	158	158	2370					
15)	Pathankot	150	40	40	40	600					
16)	Patiala	540	140	140	140	2100					
17)	Roopnagar	430	143	143	143	2150					
18)	S.A.S. Nagar	230	42	42	42	630					
19)	S.B.S. Nagar	250	65	65	65	975					
20)	Sangrur	610	172	172	172	2580					
21)	Sri Muktsar sahib	640	161	161	161	2415					
22)	Tarn Taran	510	118	118	118	1770					
<b>Total</b>		<b>11168</b>	<b>3000</b>	<b>3000</b>	<b>3000</b>	<b>45000</b>					

**Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (Engg.) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers**

9	2.4	Farm Machinery Banks in selected Villages	No.	160	80	80	80	900					
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**Responsibility of various officers as per the targets fixed:**

1)	Amritsar	4	2	0	2	40						
2)	Barnala	4	2	2	2	30						
3)	Bathinda	10	6	6	6	60						
4)	Faridkot	6	2	2	2	30						
5)	Fatehgarh Sahib	8	2	2	2	30						
6)	Fazilka	6	2	2	2	20						
7)	Ferozepur	12	6	6	6	40						
8)	Gurdaspur	4	2	2	2	30						
9)	Hoshiarpur	12	6	6	6	60						
10)	Jalandhar	0	4	4	2	20						
11)	Kapurthala	4	2	2	2	30						
12)	Ludhiana	0	4	2	4	40						
13)	Mansa	12	6	6	6	60						
14)	Moga	4	2	2	2	30						
15)	Pathankot	4	0	2	2	30						
16)	Patiala	12	6	6	4	40						
17)	Roopnagar	10	6	6	6	60						
18)	S.A.S. Nagar	12	6	6	6	60						
19)	S.B.S. Nagar	14	8	6	8	70						
20)	Sangrur	4	0	2	0	30						
21)	Sri Muktsar sahib	6	0	2	2	30						
22)	Tarn Taran	12	6	6	6	60						
		<b>Total</b>	<b>160</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>900</b>					

**Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2..Joint Director Agriculture & Farmers Welfare,Punjab (Inputs)**

**3. Chief Agiculture Officers 4. Agriculture Officers 5. Agriculture Development Officers**

10	2.4	Area under Organic Farming	ha.	6000	6000	6000	6000	72000					
<b>Responsibility of various officers as per the targets fixed:</b>													
1)	Amritsar			140	140	140	140	1680					
2)	Barnala			60	60	60	60	720					
3)	Bathinda			0	0	0	0	0					
4)	Faridkot			0	0	0	0	0					
5)	Fatehgarh Sahib			500	500	500	500	6000					
6)	Fazilka			120	120	120	120	1440					
7)	Ferozepur			100	100	100	100	1200					
8)	Gurdaspur			600	600	600	600	7200					
9)	Hoshiarpur			900	900	900	900	10800					
10)	Jalandhar			80	80	80	80	960					
11)	Kapurthala			0	0	0	0	0					
12)	Ludhiana			100	100	100	100	1200					
13)	Mansa			120	120	120	120	1440					
14)	Moga			100	100	100	100	1200					
15)	Pathankot			900	900	900	900	10800					
16)	Patiala			700	700	700	700	8400					
17)	Roopnagar			500	500	500	500	6000					
18)	S.A.S. Nagar			300	300	300	300	3600					
19)	S.B.S. Nagar			0	0	0	0	0					
20)	Sangrur			700	700	700	700	8400					
21)	Sri Muktsar sahib			0	0	0	0	0					
22)	Tarn Taran			80	80	80	80	960					
		<b>Total</b>		<b>6000</b>	<b>6000</b>	<b>6000</b>	<b>6000</b>	<b>72000</b>					

**Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (HYVP)**

**3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers**

<b>11</b>	<b>2.5</b>	<b>Distribution of foundation/certified seeds at 50% cost of the seed of crops for production of certified/ quality seeds</b>	<b>Qtl</b>	<b>900</b>	<b>1200</b>	<b>1590</b>	<b>1800</b>	<b>2100</b>					
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**Responsibility of various officers as per the targets fixed:**

1	Amritsar	50	65	90	100	120						
2	Barnala	40	55	70	80	95						
3	Bathinda	45	60	85	90	105						
4	Faridkot	35	48	70	70	85						
5	Fatehgarh Sahib	40	50	70	80	90						
6	Fazilka	45	60	70	90	105						
7	Ferozepur	45	50	75	90	100						
8	Gurdaspur	45	50	75	90	100						
9	Hoshiarpur	35	48	65	70	80						
10	Jalandhar	45	60	75	90	105						
11	Kapurthala	45	60	75	90	105						
12	Ludhiana	35	48	70	70	80						
13	Mansa	30	48	65	60	70						
14	Moga	30	48	65	60	70						
15	Pathankot	45	60	70	90	105						
16	Patiala	45	60	75	90	105						
17	Roopnagar	40	50	70	80	95						
18	S.A.S. Nagar	40	55	65	80	95						
19	S.B.S. Nagar	40	55	75	80	95						
20	Sangrur	40	55	70	80	95						
21	Sri Muktsar sahib	40	55	75	80	95						
22	Tarn Taran	45	60	70	90	105						
<b>Total</b>		<b>900</b>	<b>1200</b>	<b>1590</b>	<b>1800</b>	<b>2100</b>						



Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (HYVP)												
3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers												
12	2.5	Training on seed production and technology to the farmers.	No. of villages	290	290	290	290	550				
<b>Responsibility of various officers as per the targets fixed:</b>												
1)	Amritsar			17	17	17	17	35				
2)	Barnala			13	13	13	13	26				
3)	Bathinda			15	15	15	15	30				
4)	Faridkot			12	12	12	12	20				
5)	Fatehgarh Sahib			13	13	13	13	25				
6)	Fazilka			13	13	13	13	25				
7)	Ferozepur			13	13	13	13	25				
8)	Gurdaspur			13	13	13	13	25				
9)	Hoshiarpur			12	12	12	12	20				
10)	Jalandhar			15	15	15	15	30				
11)	Kapurthala			16	16	16	16	30				
12)	Ludhiana			12	12	12	12	20				
13)	Mansa			12	12	12	12	21				
14)	Moga			12	12	12	12	21				
15)	Pathankot			11	11	11	11	20				
16)	Patiala			15	15	15	15	30				
17)	Roopnagar			13	13	13	13	26				
18)	S.A.S. Nagar			12	12	12	12	24				
19)	S.B.S. Nagar			13	13	13	13	26				
20)	Sangrur			13	13	13	13	26				
21)	Sri Muktsar sahib			14	14	14	14	25				
22)	Tarn Taran			11	11	11	11	20				
				<b>Total</b>	<b>290</b>	<b>290</b>	<b>290</b>	<b>290</b>	<b>550</b>			

Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2..Joint Director Agriculture & Farmers Welfare,Punjab (HYVP) , (C.C), (Inputs) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers												
13	8.2	Decrease in Area under Paddy	ha.	2308000	2179700	2081000	1918000	1528000				
<b>Responsibility of various officers as per the targets fixed:</b>												
1)	Amritsar			30000	29000	27000	25000	20000				
2)	Barnala			104000	98000	94000	86000	69000				
3)	Bathinda			142000	134000	128000	118000	94000				
4)	Faridkot			90000	85000	81000	75000	60000				
5)	Fatehgarh Sahib			74000	70000	67000	62000	49000				
6)	Fazilka			33000	31000	30000	27000	22000				
7)	Ferozepur			147000	139000	132000	122000	97000				
8)	Gurdaspur			97000	92000	88000	81000	64000				
9)	Hoshiarpur			63000	60000	57000	53000	42000				
10)	Jalandhar			150000	141000	135000	124000	99000				
11)	Kapurthala			104000	98000	94000	86000	69000				
12)	Ludhiana			224000	211000	202000	186000	148000				
13)	Mansa			96000	91000	87000	80000	64000				
14)	Moga			164000	154700	148000	137000	109000				
15)	Pathankot			24000	23000	22000	20000	16000				
16)	Patiala			191000	180000	171000	159000	126000				
17)	Roopnagar			35000	33000	31000	29000	23000				
18)	S.A.S. Nagar			23000	22000	21000	19000	15000				
19)	S.B.S. Nagar			55000	52000	50000	46000	36000				
20)	Sangrur			240000	226000	216000	198000	159000				
21)	Sri Muktsar sahib			125000	118000	112000	104000	83000				
22)	Tarn Taran			97000	92000	88000	81000	64000				
<b>Total</b>				<b>2308000</b>	<b>2179700</b>	<b>2081000</b>	<b>1918000</b>	<b>1528000</b>				

Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2..Joint Director Agriculture & Farmers Welfare,Punjab (HYVP) , (C.C), (Inputs) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers													
14	8.2	Increase in Area under Maize	ha.	200000	250000	300000	350000	600000					
<b>Responsibility of various officers as per the targets fixed:</b>													
1)	Amritsar			3000	5000	7000	9000	25000					
2)	Barnala			1000	2000	4000	6000	15000					
3)	Bathinda			0	1000	2000	3000	10000					
4)	Faridkot			700	2000	4000	5000	10000					
5)	Fatehgarh Sahib			3500	6000	8000	10000	25000					
6)	Fazilka			1500	2000	5000	7000	15000					
7)	Ferozepur			300	2000	4000	6000	10000					
8)	Gurdaspur			4000	6000	8000	10000	20000					
9)	Hoshiarpur			83000	90000	94000	98000	120000					
10)	Jalandhar			15000	19000	23000	25000	47000					
11)	Kapurthala			4000	6000	8000	12000	36000					
12)	Ludhiana			4000	6000	9000	12000	36000					
13)	Mansa			300	1000	2000	3000	10000					
14)	Moga			2500	5000	7000	8000	20000					
15)	Pathankot			14000	18000	20000	22000	28000					
16)	Patiala			3000	6000	8000	11000	20000					
17)	Roopnagar			28000	30000	33000	35000	36000					
18)	S.A.S. Nagar			14000	17000	20000	23000	40000					
19)	S.B.S. Nagar			14000	18000	22000	26000	32000					
20)	Sangrur			2000	3000	5000	8000	20000					
21)	Sri Muktsar sahib			200	1000	2000	3000	10000					
22)	Tarn Taran			2000	4000	5000	8000	15000					
				<b>200000</b>	<b>250000</b>	<b>300000</b>	<b>350000</b>	<b>600000</b>					

Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2..Joint Director Agriculture & Farmers Welfare,Punjab (HYVP) , (C.C), (Inputs) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers												
15	8.2	Increase in Area under Cotton	ha.	400000	465000	500000	600000	700000				
<b>Responsibility of various officers as per the targets fixed:</b>												
1)	Barnala			4000	4650	5300	6000	7000				
2)	Batinda			140000	162800	185500	210000	245000				
3)	Faridkot			3000	3400	3900	4400	5000				
4)	Fazilka			90000	104700	119300	135000	157500				
5)	Mansa			80500	93600	106700	120800	141000				
6)	Moga			500	550	600	700	900				
7)	Sri Muktsar sahib			72000	83700	95400	108000	126000				
8)	Sangrur			10000	11600	13300	15100	17600				
		<b>Total</b>		<b>400000</b>	<b>465000</b>	<b>530000</b>	<b>600000</b>	<b>700000</b>				

**Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (HYVP) , (C.C), (Inputs) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers**

<b>16</b>	<b>8.2</b>	<b>Increase in Area under Basmati</b>	<b>ha.</b>	<b>560000</b>	<b>570000</b>	<b>580000</b>	<b>590000</b>	<b>620000</b>					
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**Responsibility of various officers as per the targets fixed:**

1	Amritsar	147000	150000	153000	156000	163000							
2	Barnala	0	0	0	0	0							
3	Bathinda	5000	5000	5000	5000	6000							
4	Faridkot	17000	18000	18000	18000	19000							
5	Fatehgarh Sahib	5000	5000	5000	5000	6000							
6	Fazilka	75000	76000	78000	79000	83000							
7	Ferozepur	26000	26000	27000	27000	28000							
8	Gurdaspur	72000	73000	74000	76000	79000							
9	Hoshiarpur	6000	6000	6000	6000	7000							
10	Jalandhar	8000	8000	8000	9000	9000							
11	Kapurthala	5000	5000	5000	5000	6000							
12	Ludhiana	14000	15000	15000	15000	16000							
13	Mansa	2000	2000	2000	2000	2000							
14	Moga	2000	2000	2000	2000	2000							
15	Pathankot	2000	2000	2000	2000	2000							
16	Patiala	26000	26000	27000	27000	28000							
17	Roopnagar	2000	2000	2000	2000	2000							
18	S.A.S. Nagar	6000	6000	6000	6000	7000							
19	S.B.S. Nagar	0	0	0	0	0							
20	Sangrur	24000	24000	24000	25000	26000							
21	Sri Muktsar sahib	38000	39000	39000	40000	42000							
22	Tarn Taran	78000	80000	82000	83000	87000							
<b>Total</b>		<b>560000</b>	<b>570000</b>	<b>580000</b>	<b>590000</b>	<b>620000</b>							

**Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (HYVP) , (C.C), (Inputs) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers**

17	8.2	Increase in Area under Pulses	ha.	30000	33300	37000	40000	50000					
<b>Responsibility of various officers as per the targets fixed:</b>													
1	Amritsar			4200	4500	4800	5500	6700					
2	Barnala			1500	1700	1900	2000	2500					
3	Bathinda			1700	1900	2100	2300	2900					
4	Faridkot			600	700	800	900	1100					
5	Fatehgarh Sahib			600	700	800	900	1100					
6	Fazilka			3500	3900	4400	4700	5900					
7	Ferozepur			1100	1200	1300	1400	1800					
8	Gurdaspur			1200	1300	1500	1600	2000					
9	Hoshiarpur			300	400	400	400	500					
10	Jalandhar			1000	1100	1200	1300	1600					
11	Kapurthala			300	400	400	400	500					
12	Ludhiana			2400	2600	2900	3100	3900					
13	Mansa			1200	1300	1500	1600	2000					
14	Moga			1500	1700	1900	2000	2500					
15	Pathankot			300	400	400	400	500					
16	Patiala			1700	1900	2100	2300	2900					
17	Roopnagar			400	500	500	600	700					
18	S.A.S. Nagar			1800	2000	2200	2400	3000					
19	S.B.S. Nagar			200	200	300	300	400					
20	Sangrur			2000	2200	2500	2700	3400					
21	Sri Muktsar sahib			900	900	1100	1100	1400					
22	Tarn Taran			1600	1800	2000	2100	2700					
<b>Total</b>				<b>30000</b>	<b>33300</b>	<b>37000</b>	<b>40000</b>	<b>50000</b>					

Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers												
18	12.1	Increase in Foodgrain Production	000' MT	30000	30500	31000	31500	32500				
<b>Responsibility of various officers as per the targets fixed:</b>												
1)	Amritsar		1485	1510	1525	1535	1585					
2)	Barnala		1175	1200	1225	1240	1285					
3)	Bathinda		1925	1955	1980	1990	2070					
4)	Faridkot		1080	1110	1125	1145	1190					
5)	Fatehgarh Sahib		800	840	865	890	940					
6)	Fazilka		1815	1835	1855	1895	1930					
7)	Ferozepur		1345	1365	1385	1405	1440					
8)	Gurdaspur		1520	1540	1565	1600	1640					
9)	Hoshiarpur		1100	1135	1145	1195	1240					
10)	Jalandhar		1578	1585	1600	1630	1680					
11)	Kapurthala		1052	1080	1100	1125	1170					
12)	Ludhiana		2445	2465	2480	2500	2560					
13)	Mansa		1282	1310	1345	1370	1420					
14)	Moga		1718	1735	1760	1785	1830					
15)	Pathankot		292	315	340	350	390					
16)	Patiala		2138	2150	2165	2190	2240					
17)	Roopnagar		540	565	595	610	620					
18)	S.A.S. Nagar		380	400	425	450	490					
19)	S.B.S. Nagar		650	675	700	720	765					
20)	Sangrur		2935	2950	2970	2985	3040					
21)	Sri Muktsar sahib		1660	1675	1700	1720	1755					
22)	Tarn Taran		1085	1105	1150	1170	1220					
		<b>Total</b>	30000	30500	31000	31500	32500					

Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2.Joint Director Agriculture & Farmers Welfare,Punjab (P.P) 3. Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers												
19	12.4	Reduction in use of Pesticides	kg/ha	0.750	0.730	0.715	0.700	0.675				
<b>Responsibility of various officers as per the targets fixed:</b>												
1)	Amritsar			0.750	0.730	0.715	0.700	0.675				It is proposed to bring down the use of pesticides in all districts from 0.817 kg/ha to 0.675 kg/ha by 2030 through awareness campaigns, shift in organic farming and judicious use through Soil health cards .
2)	Tarn Taran			0.750	0.730	0.715	0.700	0.675				
3)	Bathinda			0.750	0.730	0.715	0.700	0.675				
4)	Gurdaspur			0.750	0.730	0.715	0.700	0.675				
5)	Pathankot			0.750	0.730	0.715	0.700	0.675				
6)	Faridkot			0.750	0.730	0.715	0.700	0.675				
7)	Fatehgarh Sahib			0.750	0.730	0.715	0.700	0.675				
8)	Ferozepur			0.750	0.730	0.715	0.700	0.675				
9)	Fazilka			0.750	0.730	0.715	0.700	0.675				
10)	Hoshiarpur			0.750	0.730	0.715	0.700	0.675				
11)	Jalandhar			0.750	0.730	0.715	0.700	0.675				
12)	Kapurthala			0.750	0.730	0.715	0.700	0.675				
13)	Ludhiana			0.750	0.730	0.715	0.700	0.675				
14)	Mansa			0.750	0.730	0.715	0.700	0.675				
15)	Moga			0.750	0.730	0.715	0.700	0.675				
16)	Sri Muktsar sahib			0.750	0.730	0.715	0.700	0.675				
17)	S.B.S. Nagar			0.750	0.730	0.715	0.700	0.675				
18)	Patiala			0.750	0.730	0.715	0.700	0.675				
19)	Sangrur			0.750	0.730	0.715	0.700	0.675				
20)	Barnala			0.750	0.730	0.715	0.700	0.675				
21)	Roopnagar			0.750	0.730	0.715	0.700	0.675				
22)	S.A.S. Nagar			0.750	0.730	0.715	0.700	0.675				



Name of the key Functionary 1:- Director , Agriculture & Farmers Welfare,Punjab 2..Joint Director Agriculture & Farmers Welfare,Punjab (P.P) 3.													
Chief Agriculture Officers 4. Agriculture Officers 5. Agriculture Development Officers													
20	12.4	Reduction in use of Fertilizers (NPK)	kg/ha	210	208	207	201	195					
<b>Responsibility of various officers as per the targets fixed:</b>													
1)	Amritsar			210	208	207	201	195					It is proposed to bring down the use of fertilizers in all districts from 212 kg/ha to 195 kg/ha by 2030 through awareness campaigns, shift in organic farming and judicious use through Soil health cards .
2)	Tarn Taran			210	208	207	201	195					
3)	Bathinda			210	208	207	201	195					
4)	Gurdaspur			210	208	207	201	195					
5)	Pathankot			210	208	207	201	195					
6)	Faridkot			210	208	207	201	195					
7)	Fatehgarh Sahib			210	208	207	201	195					
8)	Ferozepur			210	208	207	201	195					
9)	Fazilka			210	208	207	201	195					
10)	Hoshiarpur			210	208	207	201	195					
11)	Jalandhar			210	208	207	201	195					
12)	Kapurthala			210	208	207	201	195					
13)	Ludhiana			210	208	207	201	195					
14)	Mansa			210	208	207	201	195					
15)	Moga			210	208	207	201	195					
16)	Sri Muktsar sahib			210	208	207	201	195					
17)	S.B.S. Nagar			210	208	207	201	195					
18)	Patiala			210	208	207	201	195					
19)	Sangrur			210	208	207	201	195					
20)	Barnala			210	208	207	201	195					
21)	Roopnagar			210	208	207	201	195					
22)	S.A.S. Nagar			210	208	207	201	195					

Name of Department : Soil and Water Conservation, Punjab										Annexure-3			
Sr. No.	Goal No.	Key Functionary/ Key Performance Parameters	KPP Unit	Targets					Achievement				Remarks
				2019-20	2020-21	2021-22	2022-23	2030 Target	2019-20	2020-21	2021-22	2022-23	
<b>Name of the Key Functionary:</b> <b>1. Chief Conservator of Soils, Punjab, Chandigarh. 2. Conservator of Soils, Chandigarh (HQ), SAS Nagar, Jalandhar and Ferozepur.</b> <b>3. Divisional Soil Conservation Officers, all districts of Punjab 4. Sub Divisional Soil Conservation Officials 5. Soil Conservation Officers</b>													
1	6.3	6.3.2: Use of treated water from Sewerage Treatment Plants (STP's) for irrigation	Irrigated Area in ha.	12261	15327	18392	15327	251614					
<b>Responsibility of various officers as per the targets fixed:</b>													
1)	Amritsar			112	140	168	140	2298					
2)	Barnala			740	925	1110	925	15186					
3)	Bathinda			330	413	495	413	6772					
4)	Faridkot			310	388	465	388	6362					
5)	Fatehgarh Sahib			1115	1394	1673	1394	22881					
6)	Fazilka			1125	1406	1688	1406	23087					
7)	Ferozepur			440	550	660	550	9029					
8)	Gurdaspur			139	174	209	174	2852					
9)	Hoshiarpur			370	463	555	463	7593					
10)	Jalandhar			1560	1946	2338	1946	32016					
11)	Kapurthala			66	83	99	83	1354					
12)	Ludhiana			1450	1813	2175	1813	29756					
13)	Mansa			148	185	222	185	3037					
14)	Moga			1150	1438	1725	1438	23600					
15)	Pathankot			100	125	150	125	2052					
16)	Patiala			585	731	878	731	12005					
17)	Rupnagar			411	514	617	514	8434					
18)	S.A.S. Nagar			430	538	645	538	8824					
19)	Sangrur			970	1213	1455	1213	19906					
20)	Shaheed Bhagat Singh Nagar			100	125	150	125	2052					
21)	Shri Mukatsar Sahib			510	638	765	638	10466					
22)	Tarantaran			100	125	150	125	2052					
	<b>Total</b>			<b>12261</b>	<b>15327</b>	<b>18392</b>	<b>15327</b>	<b>251614</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

District-wise Indicator Targets are tentative and subject to demand and feasibility, approval and continuation of the Scheme/ project and release of funds by GOI and State Govt. in the successive years. The targets have been worked out on the basis of proposals either already submitted or likely to be submitted for approval to GoI under PMKSY and MABARD under RIDF respectively.

Name of Department : Soil and Water Conservation, Punjab										Annexure-3			
Sr. No.	Goal No.	Key Functionary/ Key Performance Parameters	KPP Unit	Targets					Achievement				Remarks
				2019-20	2020-21	2021-22	2022-23	2030 Target	2019-20	2020-21	2021-22	2022-23	
<b>Name of the Key Functionary:</b> <b>1. Chief Conservator of Soils, Punjab, Chandigarh. 2. Conservator of Soils, Chandigarh (HQ), SAS Nagar, Jalandhar and Ferozepur.</b> <b>3. Divisional Soil Conservation Officers, all districts of Punjab 4. Sub Divisional Soil Conservation Officials 5. Soil Conservation Officers</b>													
2	6.4	6.4.2 : Promotion of Underground Pipeline System for on-farm conservation of irrigation water	Irrigated Area in ha.	7742	9678	11613	9678	648927					
<b>Responsibility of various officers as per the targets fixed:</b>													
1)	Amritsar			318	398	477	398	26672					District-wise Indicator Targets are tentative and subject to demand and feasibility, approval and continuation of the Scheme/ project and release of funds by GOI and State Govt. in the successive years. The targets have been worked out on the basis of proposals either already submitted or likely to be submitted for approval to GoI under PMKSY and MABARD under RIDF respectively.
2)	Barnala			94	117	140	117	7848					
3)	Bathinda			843	1054	1265	1054	0					
4)	Faridkot			1222	1528	1834	1528	102466					
5)	Fatehgarh Sahib			54	68	81	68	4536					
6)	Fazilka			116	145	175	145	9756					
7)	Ferozepur			543	678	814	678	45481					
8)	Gurdaspur			295	369	443	369	24745					
9)	Hoshiarpur			501	626	751	626	41954					
10)	Jalandhar			404	505	606	505	33873					
11)	Kapurthala			181	226	271	226	15136					
12)	Ludhiana			395	493	592	493	33081					
13)	Mansa			196	245	294	245	16412					
14)	Moga			160	200	241	200	13441					
15)	Pathankot			11	14	17	14	945					
16)	Patiala			470	587	705	587	39386					
17)	Rupnagar			324	405	487	405	27186					
18)	S.A.S. Nagar			11	13	16	13	898					
19)	Sangrur			987	1233	1480	1233	82693					
20)	Shaheed Bhagat Singh Nagar			105	131	157	131	8771					
21)	Shri Mukatsar Sahib			474	593	711	593	39728					
22)	Tarantaran			38	50	56	50	3255					
	<b>Total</b>			<b>7742</b>	<b>9678</b>	<b>11613</b>	<b>9678</b>	<b>578263</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	

Name of Department : Soil and Water Conservation, Punjab										Annexure-3			
Sr. No.	Goal No.	Key Functionary/ Key Performance Parameters	KPP Unit	Targets					Achievement				Remarks
				2019-20	2020-21	2021-22	2022-23	2030 Target	2019-20	2020-21	2021-22	2022-23	
<b>Name of the Key Functionary:</b> <b>1. Chief Conservator of Soils, Punjab, Chandigarh. 2. Conservator of Soils, Chandigarh (HQ), SAS Nagar, Jalandhar and Ferozepur.</b> <b>3. Divisional Soil Conservation Officers, all districts of Punjab 4. Sub Divisional Soil Conservation Officials 5. Soil Conservation Officers</b>													
3	6.4	6.4.3 : Promotion of Micro Irrigation to increase water use efficiency in irrigation	Irrigated Area in ha.	2145	2682	3218	2682	76618					
<b>Responsibility of various officers as per the targets fixed:</b>													
1)	Amritsar			89	111	134	111	3183					
2)	Barnala			38	48	57	48	1365					
3)	Bathinda			149	187	224	187	5330					
4)	Faridkot			61	77	92	77	2187					
5)	Fatehgarh Sahib			34	43	52	43	1230					
6)	Fazilka			109	136	163	136	3888					
7)	Ferozepur			283	354	424	354	10106					
8)	Gurdaspur			175	219	263	219	6250					
9)	Hoshiarpur			294	367	440	367	10487					
10)	Jalandhar			121	152	182	152	4339					
11)	Kapurthala			45	56	67	56	1595					
12)	Ludhiana			111	139	167	139	3969					
13)	Mansa			75	94	112	94	2678					
14)	Moga			43	53	64	53	1526					
15)	Pathankot			39	49	58	49	1389					
16)	Patiala			108	135	162	135	3856					
17)	Rupnagar			73	92	110	92	2622					
18)	S.A.S. Nagar			52	65	78	65	1848					
19)	Sangrur			72	91	109	91	2587					
20)	Shaheed Bhagat Singh Nagar			39	48	58	48	1375					
21)	Shri Mukatsar Sahib			70	88	106	88	2513					
22)	Tarantaran			65	78	96	78	2295					
	<b>Total</b>			<b>2145</b>	<b>2682</b>	<b>3218</b>	<b>2682</b>	<b>76618</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
<b>Name of Department: Department of Horticulture</b>													
Sr. No	Key Functionary/ Key Performance Indicator	KPI Unit	Targets					Achievement				Remarks	
			2019-20	2020-21	2021-22	2022-23	Year 2030	2019-20	2020-21	2021-22	2022-23		

District-wise Indicator Targets are tentative and subject to demand and feasibility, approval and continuation of the Scheme/ project and release of funds by GOI and State Govt. in the successive years. The targets have been worked out on the basis of proposals either already submitted or likely to be submitted for approval to GoI under PMKSY and MABARD under RIDF respectively.

Name of the Key Functionary: 1. Director Horticulture 2. Joint Director Horticulture 3. Deputy Director Horticulture 4. Asstt. Director Horticulture 5. Horticulture Development Officers												
1	Additional area Under Horticultural Crops	hac.	16000	16225	16500	17000	5.59 lac hac.		15	16	17	Actual expenditure/achievements will be made as per availability of funds
	Area under protected cultivation (hac.)	hac.	15	18	20	25	500 hac					
2	Vegetable Seed Production	Quintal	18880	19500	20100	20600	25000					
	Fruit Plants Production	No. in lakhs	12	12.05	12.10	12.15	12.5 lakh annually					
3	Supply of Honey Bee Colonies annually	No	56000	58000	60000	61000	9.00 lakh					

Note :- The Department of Horticulture, Punjab does not receive any grant/projects form Govt. of Punjab for the development of Horticulture in the State. The State level annual action plan has been sent to Government of India vide this office letter no. 727 , dated 12-04-2019 which is pending for approval for not release of GOI and Govt. of Punjab share. However the current district wise action plan is submitted which can be implemented if above parameters are met.

Name of the Department: Department of Agriculture & Farmers Welfare, Punjab

Annexure- 4

Rs in Cr

Sr. No.	Scheme/Project/ Intervention	2018-19		Financial Requirements					Actual Expenditure			
		Budget Estimates	Expenditure	2019-20	2020-21	2021-22	2022-23	Total	2019-20	2020-21	2021-22	2022-23
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Rashtriya Krishi Vikas Yojana (RKVY)	400.00	126.74									
<b>a</b>	<b>Subsidy on Wheat Seed</b>			15.00	15.00	15.00	15.00	60.00				
2	National Food Security Mission (NFSM)	10.00	4.00	16.00	16.00	16.00	16.00	64.00				
3	Support to State Extension Programme	25.00	19.72	22.00	23.00	24.00	25.00	94.00				
4	National Mission for Sustainable Agriculture ( Soil Health Management )	4.00	3.94	9.63	9.63	9.63	9.63	38.52				
<b>a</b>	<b>Soil Healh Cards</b>			13.52	13.52	13.52	13.52	54.08				
<b>6</b>	<b>Paramparagat Krishi Vikas Yojana (PKVY)</b>	5.88	5.88	10.20	10.20	10.20	10.20	40.80				
7	National Mission on Agriculture Extension and Technology	2.11	0.00	45.40	60.40	75.40	90.40	271.60				
8	Promotion of Agriculture Mechanization for In Situ Management of Crop Residue Under Sub Mission on Agriculture Mechanization. 100% GOI Funded	(Direct Release to Deptt.)	262.84	425.66	90.00	*	*	515.66				
9	Sub Mission on Agriculture Mechanization (SMAM)	100.00	0.00	135.74	40.00	40.00	40.00	255.74				
10	Provision for Research and Development Scheme of P.A.U. Ludhiana	236.51	222.01	236.51	250.00	275.00	300.00	1061.51				
11	Debt Relief to Farmers/ Landless Labourers/Suicide Effected Families of Farmers	4250.00	4237.00	3000.00	0.00	0.00	0.00	3000.00				
12	Punjab State Farmers and Farm Workers Commission	2.00	2.00	2.00	2.00	2.00	2.00	8.00				

\* Subject to continuation of the Scheme and release of funds by GOI in the successive years.

Name of the Department: Department of Soil and Water Conservation, Punjab

Annexure- 4

Rs in Cr

Sr. No.	Scheme/Project/ Intervention	2018-19		Financial Requirements					Actual Expenditure			
		Budget Estimates	Expenditure	2019-20	2020-21	2021-22	2022-23	Total	2019-20	2020-21	2021-22	2022-23
1	2	3	4	5	6	7	8	9	10	11	12	13
1	SWC-29: Project for utilization of treated water for irrigation from Sewage Treatment Plants in Punjab (NABARD-RIDF-25)	1.00	0.00	18.90	23.62	28.35	23.62	94.49				
2	SWC-31: Project for alternate source of irrigation by utilizing treated water for irrigation from Sewage Treatment Plants (STPs) under CSS Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)	0.10	0.00	15.40	19.25	23.10	19.25	77.00				
3	Project for alternate source of irrigation by utilizing treated water of Sewage Treatment Plants in Punjab (NABARD-RIDF-27)			53.98	67.48	80.97	67.48	269.91				
4	SWC-17: Scheme for providing assured irrigation water to the waterlogged areas in the south western district (NABARD-RIDF-21)	10.00	10.00	4.32	5.40	6.48	5.40	21.60				
5	SWC-19: Project for laying of Underground Pipeline for Conveyance of irrigation water in canal commands in 11 districts of Punjab (NABARD-RIDF-22)	10.00	9.68	16.84	21.05	25.26	21.05	84.20				
6	SWC-31: CSS Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) for soil and water conservation	0.30	0.00	20.00	25.00	30.00	25.00	100.00				
7	Project for promotion of judicious use of irrigation water in farming in Punjab (NABARD-RIDF-26)			20.00	25.00	30.00	25.00	100.00				
8	SWC-16: Project for Promotion of Micro Irrigation in Punjab (NABARD-RIDF-20)	10.00	8.27	4.48	5.60	6.72	5.60	22.40				
9	SWC-02: CSS on Micro Irrigation under PMKSY	5.00	2.00	6.66	8.33	10.00	8.33	33.32				
10	SWC-30: Project for Promotion of Intelligent Irrigation in Punjab (NABARD-RIDF-25)	1.00	0.00	14.60	18.25	21.90	18.25	73.00				

Note:- Financial Targets subject to continuation of the Scheme and release of funds by GOI and State Govt. in the successive years.

Sr. No.	Scheme/Project/ Intervention	2018-19		Financial Requirements					Actual Expenditure			
		Budget Estimates	Expenditure	2019-20	2020-21	2021-22	2022-23	Total	2019-20	2020-21	2021-22	2022-23
1	2	3	4	5	6	7	8	9	10	11	12	13
1	New Plantation under various fruit trees.	Rs. 60000 per ha .	During this year Rs 3.44 cr. For 2889 ha. has been disbursed.	Financial Assistance @ 50%, we require 15.00 crore for 5000 ha	15.66 crore for 5250 ha (Increase by 5%)	16.44 crore (Increase by 5%)	17.26 crore (Increase by 5%)	64.36				
2	Vegetable Nutrition Gardening(3 marlas/75 sq. m.) (Around 1 lakh Winter & Summer vegetable kitchen gardening kits will be distributed) @ 100Rs. Per kit.	Rs. 100 per vegetable seed kit	0	Financial Assistance @ 50%, we require 0.50 crore	0.55 crore (Increase by 10%)	0.60 crore (Increase by 10%)	0.66 crore (Increase by 10%)	2.31				
3	Fruit Nutrition Garden(Around 21 kinds of fruit plants will be planted in 625 sq.m. area) For 200 Units	Rs. 5000 per Fruit Nutrition Garden	0	Financial Assistance @ 50%, we require 0.05	0.06 crore (Increase by 10%)	0.06 crore (Increase by 10%)	0.07 crore (Increase by 10%)	0.24				
4	RoofTop Gardening For 200Units	Rs.35000 per unit	0	Financial Assistance @50%, we require0.35	0.39 crore (Increase by 10%)	0.42 crore (Increase by 10%)	0.46 crore (Increase by 10%)	1.62				
5	Vertical Gardening as demonstration units	Rs. 250.00 per sq. feet	0	0.25 crore for 10000 sq . Feet	0.28 crore for 11000 sq. feet	0.30 crore for 12000 sq. feet	0.30crore for 12000 sq . Feet	1.13				
6	MIDH	Rs. 4000 per bee box	During this year Rs 22.00 lakh for 9375 bee boxes has been disbursed.	Financial Assistance @ 40%, we require 8.96 cr. for 56000 bee boxes	9.40 crore for 58000 bee boxes (Increase by 5%)	9.60 crore (increase by 5%)	9.70 crore (Increase by 5%)	37.66				
				25.11	26.34	27.42	28.45	107.32				