

**2023-28**

**An Implementation Plan**

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**Holistic Development of Agricultural Sector in  
Jammu & Kashmir Union Territory  
Implementation Framework**

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**Agricultural Production Department, J&K UT**

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## **VISION**

# **Transform J&K's Agricultural Economy as Integrative of Bio-Economy**

## **MISSION**

- Transform subsistence agriculture into sustainable commercial Agri-economy.
- Emphasis on ecosystem services and, restoration & sustainable utilization of biodiversity to efficiently use bio-resources for food, feed & industry.
- Create agri-business ecosystems with inbuilt functional value chain
- Promote inbuilt risk management through diversification and resilient & smart agricultural practices.
- Adopt farmer- and community-centric approach for holistic development of agriculture.
- Support human resources development for technology backup to sustain and accelerate agricultural transformation.

## **Executive Summary**

The Union Territory of Jammu & Kashmir has a total population of 1.30 crore and over 70% of this population resides in rural areas with agriculture as predominant livelihood venture. Of the total UTs population, 34.5% are

workers and as high as 41% of 43.22 lac workers are exclusively engaged as cultivators or agricultural labors. Only 17% (7.19 lakh ha) of geographical area is under agriculture against the national average of 42%. The entire system of agriculture in the UT of J&K raises number of issues for its sustenance as its agriculture differs from that of plains owing to inaccessibility, fragility, poor infrastructure and other mountain specificities characterizing its production system. Richness of UT in terms of agro-climatic niches, unexplored water resources and biodiversity provide favorable environment for switching to market and technology led farming practices.

In order to harvest newer opportunity from the improvised existing system in the niche mountain agro-ecosystems, there is a need for multi-pronged strategy ranging from infrastructure development to specific technological interventions coupled with flagship programs to address the emerging challenges of agriculture and allied sectors in the region. To harvest the potential of bio-economy in the Jammu & Kashmir, it has to sail through myriad of challenges and fix the solutions for turbulent currents of uncertain environments and growing pressures of population footprints and resource scarcity. It was in this context that the Agricultural Production Department, in collaboration with two farm universities held a multi-stakeholder convention on July, 18-19, 2022 with all the stakeholders to deliberate upon the issues confronting the sector in order to come up with a pragmatic and synergized policy program which can address the challenges and transform sector into the envisioned prosperous sustainable agri-economy in the region. With this endeavor, the Jammu & Kashmir government formed a high empowered UT Level Apex Technical Committee under the Chairmanship of Dr. Mangla Rai, Former Director General, ICAR to frame a roadmap for boosting the unharnessed bio-economic potential of agricultural sector whereby the externalities of green revolution observed in mainland India are not repeated in this policy framework and are duly addressed. To contemplate the envisioned growth model into reality for formulation of programs and projects which can enshrine the core philosophy of sustainable and commercial bio-economy, various technical working groups were constituted with diverse backgrounds ranging from academia, administration, industry, farmer groups etc. The Apex Technical Committee held virtual meeting with Technical Working Groups and identified 28 priority projects which can be taken at an earnest to kick-start the new era of agriculture growth and development in J&K. These projects

under the chairmanship of various technical working groups were evaluated by the Apex Committee Members in physical meetings and were cleared after revisions. The Apex Committee made a detailed presentation to His Excellency Lieutenant Governor of J&K in presence of Chief Secretary, whereby, the projects were approved for its effective implementation on ground to realize the goal of sustainable commercial agriculture.

**Table 1. Projects proposed for execution**

S. No.	Name of the Project
1.	Development of Seed and Seed Multiplication Chain in PPP mode
2.	Production of Designer Plants for promotion of HD plants and rejuvenation of orchards
3.	Dairy Development in J&K
4.	Reorienting priorities: Self-sufficiency in mutton production in J&K
5.	Development of fodder resources for UT of J&K
6.	Promotion of mushroom cultivation
7.	Promotion of Apiculture
8.	Promotion of Niche crops in UT of J&K
9.	UT level food processing program for development of clusters for specific products of J&K
10.	Promotion of Oilseeds
11.	Aquaculture development in J&K
12.	Promotion of Vegetables/exotic vegetables under open & hi-tech protected cultivation
13.	Promotion of wool/pelt processing and marketing
14.	Promotion of Nutri cereals (Millets)
15.	Formulation of 300 FPOs
16.	Development of rain fed areas of J&K
17.	Promotion of commercial floriculture in UT of J&K
18.	Promotion of medicinal/aromatic plants on commercial basis
19.	Roadmap for poultry development in J&K
20.	Strengthening Agri-Marketing System in UT of J&K
21.	Sensor based smart Agriculture
22.	Technological interventions to strengthen Sericulture in UT of J&K
23.	Innovative approaches in agriculture extension
24.	Promotion of Sustainable/organic agriculture
25.	Adoption & promotion of integrate farming system (IFS)/Integrated Livelihood systems (ILS) in UT of J&K
26.	J&K Soil & Land Resource Information System
27.	Farm Mechanization and Automation
28.	Minimizing Pesticide use in Agriculture.
29.	Support to Human Resource Development for Technological backstop for Sustainable and Accelerated Transformation of Agriculture

The mega project is to be executed under the overall supervision and

guidance of Hon'ble Lieutenant Governor, UT of J&K. Powers will be delegated for the smooth implementation of the project. A project implementation framework for the effective execution and management of the project has been devised and envisaged in this document. The implementation plan shall comprise of following phases:

- Phase I : Feasibility Analysis (ex ante analysis)
- Phase II : Project Planning
- Phase III : Project Execution
- Phase IV : Project Management
- Phase V : Project Review (ex poste analysis)

A number of Committees would be constituted with delegation of responsibilities for the effective management of agricultural project in the J&K UT.

## 1. Context

Jammu & Kashmir lies at the northern extreme of the country and falls within the fragile ecosystem of Himalayan region. The Union Territory of Jammu & Kashmir (UT of J&K) has a total population of 1.30 crore and over 70 per cent of this population resides in rural areas and 34.5 per cent belongs to working class. Of total workers 41 per cent (43.22 lakh) are exclusively engaged as cultivators or agricultural labourers. These workers act upon 7.19 lakh hectare agricultural land (17% geographical area) to produce for its residents and to overcome the market demands. The agriculture despite being single largest contributor to net domestic product and the source for majority of population is characterized by various mountain specificities, like inaccessibility, fragility, poor mobility and also poor infrastructural development in terms of market leading to inefficient exploitation of available resources and niche for development. Therefore, this demands a distinct treatment for its sustenance which lies in effective strategies that warrant balanced growth with available resource base at the command of farming community.

Despite transformation of rural sector, territory's agriculture still contributes more than 18 per cent to net state domestic product while, other sectors including service sector have a lion's share in it. But it is interesting

to note that the dependence on agricultural sector is still higher than other sectors of the state economy. Though it provides livelihood opportunities to over 70% of the population in J&K is directly or indirectly but it could be argued that the productivity of workers in non-agricultural sector is higher compared to agricultural sector. The lower labour productivity in agricultural sector in J&K has been the bone of contention among the planners. Majority of the farmers in J&K belong to small/marginal category with fragmented land holdings, therefore, sustainable & inclusive development of agriculture and allied sectors is needed to raise socio-economic status of people of J&K and create better livelihood opportunities for people of J&K.

The mountain agriculture characteristics have shaped a subsistence farm economy with agricultural GDP accounting for just 18.4% of total state GDP. The farm economy is polarised to just three major crops accounting for 70% crop area, leaving a foodgrain deficit of 40%. The intensification efforts of agriculture sector have huge environmental trade-offs due to fragility of ecosystem, therefore there is a need for sustainable intensification towards a bioresource based economy (bioeconomy) that can have scale, returns as well as sustainability. Such a system is expected to transform farm economy of J&K from subsistence to self-reliance and create equitable opportunities for livelihood, employment and market economy. This warrants a holistic approach for diversifying agricultural product portfolio that adds value, creates demand and generates employment. The strategic climate and bioresource diversity can be harnessed by enabling policy support system that focuses on use of technology, knowledge and capital investment through promotion of secondary agriculture, value addition and processing, diversification, market linkages, capacity building and resilience of farming systems. The approach is in line with the policy of doubling farmers income that is based on four important pillars viz., sustainability of production, value for farm output, strengthening of extension services for outreach and building & enabling agriculture to operate as an enterprise.

In order to harvest newer opportunity from the improvised existing system in the niche mountain agro-ecosystems, there is a need for multi-pronged strategy ranging from infrastructure development to specific technological interventions coupled with flagship programs to address the emerging challenges of agriculture and allied sectors in the region. To harvest the potential of bio-economy in the Jammu & Kashmir, it has to sail

through myriad of challenges and fix the solutions for turbulent currents of uncertain environments and growing pressures of population footprints and resource scarcity. It was in this context that the Agricultural Production Department, UT of J&K in collaboration with two farm universities held a multi-stakeholder convention on July, 18-19, 2022 with all the stakeholders to deliberate upon the issues confronting the sector in order to come up with a pragmatic and synergized policy program which can address the challenges and transform sector into the envisioned prosperous sustainable agri-economy in the region. To this effect UT level Apex Committee and Technical Working Committees were constituted by Hon'ble Lieutenant Governor Shri. Manoj Sinha and entrusted them to come up with short and medium term policies on basis of resource endowments and ground realities for the Holistic Development of Agricultural Sector of J&K union territory. At first instance the committee proposed a Mega Project with 29 sub-projects on the theme and these projects were approved in principle by the Hon'ble Lieutenant Governor J&K.

For the smooth execution of various activities of this mega project at ground an implementation framework has to be devised with utmost precision. This document envisages the generalized implementation plan for the efficient utilization of project allocation toward efficient execution of project activities.

## **2. Why to sustain agriculture & agri-based industry**

Agriculture has been the source of livelihood directly or indirectly for a majority population in J&K and Ladakh UTs. The concentration of poor and landless labourers within agriculture and impossibilities of their outmigration due the lack of formal education or skill emphasize upon steady growth of agricultural sector in this geographical location. It provides food for growing population, export earnings and raw material for agri-based industries. Development of this important sector is demand for ensuring the supply of these goods and services on the long-term basis. Huge marketable surpluses of fruits, vegetables, milk, etc make them tradable items as fresh and as value added products. Moreover the adoption of High Density Plantation of fruits and introduction of sheep breeds is expected to enhance productivity of fresh fruits and meat by manifolds. These options demand the value addition and building of processing & storage infrastructure so as to earn form, time and place utilities. Development of secondary agriculture

not only create employment but also strengthen multiplier effects by creating demand of value added products and induced demand of inputs.

To sum up agricultural development would sustain rural economy and have positive impact on other sectors by following ways:

- ❖ Creation of employment opportunities
- ❖ Encouragement of entrepreneurship & Start ups
- ❖ Reducing food prices
- ❖ Creation of economic opportunities in secondary agriculture
- ❖ Stimulating transitions in agricultural and rural economy
- ❖ Market participation (commodity markets/labour markets/finance markets, etc.)

### **3. Discouraging and Encouraging Factors of Agriculture**

#### **3.1. Factors discouraging agricultural & allied Sectors**

- a. **Huge food losses:** The carrying capacity of productive resources in the territory is very meagre and the problems get accentuated with the huge post-harvest loss of food. As high as 30 per cent food grains get wasted annually. It demands concerted efforts to prevent or reduce these losses to the minimum.
- b. **Shrinking productive land & Emergency of marginal holdings:** There has been widespread conversion of land to unproductive uses. The division of holdings on the name of inheritance has resulted in the emergence of holdings of marginal category. The average holding size has reduced consistently to reach to 0.41 ha which is meagre to sustain growing population in the state.
- c. **Terms of trade in favour of imports:** Although apple, walnut and saffron form items of international trade in the state. However, we are yet to harness the potential available in the global trade. State has earned appreciable revenue from export of these items though the apple export constitutes only 18 per cent of total apple import. Further the state has poor price competitiveness in the global market as it could export at significantly lower prices compared to imports.
- d. **Stagnant irrigation capacities:** Despite huge amount of investment in major and minor irrigation the irrigation capacities in the state are stagnant at 42 per cent of cropped area which has hampered intensification of cropping.
- e. **Huge technological gaps:** Farmers were seen to deviate from scientific protocols in all the farming systems though the gaps were wider in cold-arid

Ladakh and temperate region of J&K UT. For example, they use to apply more seeds, pesticides and urea than recommendation, and of less FYM, DAP, phosphates than recommendation. Owing to these gaps farmers could not realize potential of their crops and even in their fruits have pesticide residues above tolerance limit.

- f. **Undescriptive animals & area under land races:** Although there is an increase replacement of indigenous with exotic breeds of animals and land races with improved/high yield variety of crops but, still over 40 per cent and 60 per cent of animals and crops are either non descriptive. Since the scope for expansion of agricultural land or increase in livestock is poor, the emphasis is on enhancement of yield levels that comes from adoption of technologies in all the enterprises.
- g. **Price/market uncertainties:** One of the robust discouraging factors in agriculture is the risk associated with prices and market failures. The demand and supply imbalances often cause price distortions that deprive farmers of their real returns and may even abandon the land in extreme cases. Utilities and scale economies have to be realized to equilibrate demands with supplies.
- h. **Climate change & hazards:** Climate related uncertainties forms a potent issue agricultural sector across the globe and mountainous ecology in particular is confronting. Loss of agricultural land, crop failures and hazards associated with extreme climate events seems to be the major challenges farmers are facing at the field.
- i. **Meagre processing capacities:** The processing of agricultural produce is at the infancy stage in the UTs of J&K & Ladakh despite the fact that this option is highly viable in view of huge food wastage. Processing for perishables commodities in J&K is round 2 per cent only. These capacities have to be expanded without any delay for earning economies and reduction of post-harvest food losses.

Besides there are number of factors that discourage agricultural development efforts; few of them are either related to resources or institutions.

### **3.2. Factors encouraging agricultural & allied sectors**

- a. **Proactive institutions:** Government with its R&D institutions are highly proactive for realizing the benefits of development efforts. A number of state and central sponsored schemes are being implemented for agriculture and farming community.
- b. **Increasing demand for food and value-added products:** The growing population in the region demands more food and raw materials for secondary and tertiary sectors. It implies that the market requirements are high for agricultural

produce and demands are yet higher for value added produce. These options are highly encouraging for the processing to flourish especially in the rural areas.

- c. **Rising demand of animal-based products:** The rising economic status has created an increased demand for animal-based products across the country. Measures are to be taken to tap the potential in livestock sector of the territory.
- d. **Technological interventions:** R&D institutions including SKUAST have been innovating and improving/sharpening technologies to replace the obsolete inputs used at the field. These options to a great extent have enhanced the productivity levels to major crops and animal, however, development of technologies and their adoption at the field level has to be a regular phenomenon.
- e. **Entrepreneurship opportunities:** Agricultural & allied sectors of the territory offer wide opportunities for entrepreneurship and startups in a variety of ventures. Supporting factors have to be put in place to encourage such agripreneurs in demand driven products.
- f. **Surplus in niche-based commodities:** All the sectors of agriculture have commercial orientation with an appreciable surplus for markets. Surplus produces will not only come up with the demands for domestic markets but it may also attract global partners for product development.

Besides there are a number of supporting and suppressing factor that characterize our agricultural & allied sector.

## 4. SWOT Analysis

### i. Strengths:

- a. Diverse Natural Capital - soil, quality water, biodiversity & micro-climatic variations
- b. Niche crops
- c. Supportive-infrastructure
- d. Educated and qualified human resources.
- e. Easily scalable R&D and Extension

### ii. Weaknesses:

- a. Marginal and fragmented holdings
- b. Low level of mechanization
- c. Poor resource use efficiency
- d. Poor access to institutional credit
- e. Poor Market structure
- f. Absence of Value Chain

**iii. Opportunities:**

- a. Scope for mobilizing farmers—FPOs, SHGs, CIGs, FIGs, VPOs etc
- b. Responsive & progressive farming community
- c. Comparative advantage in several agri-commodities
- d. Huge potential for processing
- e. Unique scope for off-season agriculture
- f. Pristine production environment -brand value in export market

**iv. Threats:**

- a. Dwindling natural resources
- b. Unplanned and irrational Land Use
- c. Diversion of arable land for non-agriculture purpose
- d. Increasing biotic and abiotic stress
- e. Climate change

## **5. Drivers & strategic growth model**

- a. Enhancing sustainability:** Sustainable farms will be key to our ability to ensure sustained food supplies. The reclamation of degraded biophysical resource base for agriculture including building soil carbon stocks, reducing GHG emissions, soil and water quality and enhancing sequestration from land crop systems, improving resource use efficiency, water saving and harvesting systems and balancing energy trade-offs will be key components of sustainable farms. Conservation of biodiversity will hold great value for preparing ourselves for climate change driven catastrophes as well as building our adaptive capacity. Management option will also hold key in optimizing resource allocation to agriculture and shall be driven by AI/ML for site specific management.
- b. Robust Seed Supply Chain:** Seed is the most important driver of enhancing productivity to the tune of 30% alone. In the new farm sector landscape, we envisage a strong seed chain with technology and outreach support, emphasis on PPP mode, linkages in National Seed Corporation and local entrepreneurs. Focus will be also on strengthening community seed systems especially in far flung areas. There is a need for parallel enhancement in varietal as well as seed replacement rate to ensure increased food production especially in crops like pulses and oilseeds.
- c. Secondary Agriculture:** There is a need for paradigm shift to farming towards ventures that not only increase income but also generate employment opportunities for skilled youth. J&K has a comparative advantage in diversity of

crops and commodities such as medicinal and aromatic plants, floriculture, honey, mushrooms, minor fruits and exotic vegetables, dairy, livestock, poultry that can be up scaled. This will bring much needed diversity in our fields as well as help state move from subsistence to self-reliance. The most important spin off benefit of secondary agriculture will be efficient utilization of human resource not involved in primary agriculture such as women and educated rural youth. Secondary Agriculture is envisioned to contribute to rural industrialization in the form of Cottage and Village Industries that provide inputs into primary agriculture and also offer various pre-conditioning services to the commodities produced through primary agriculture before value addition. This is important in view of the fact that rural farm income from agriculture has gone down from 77% to 64% and non-farm income has increased from 23% to 36%.

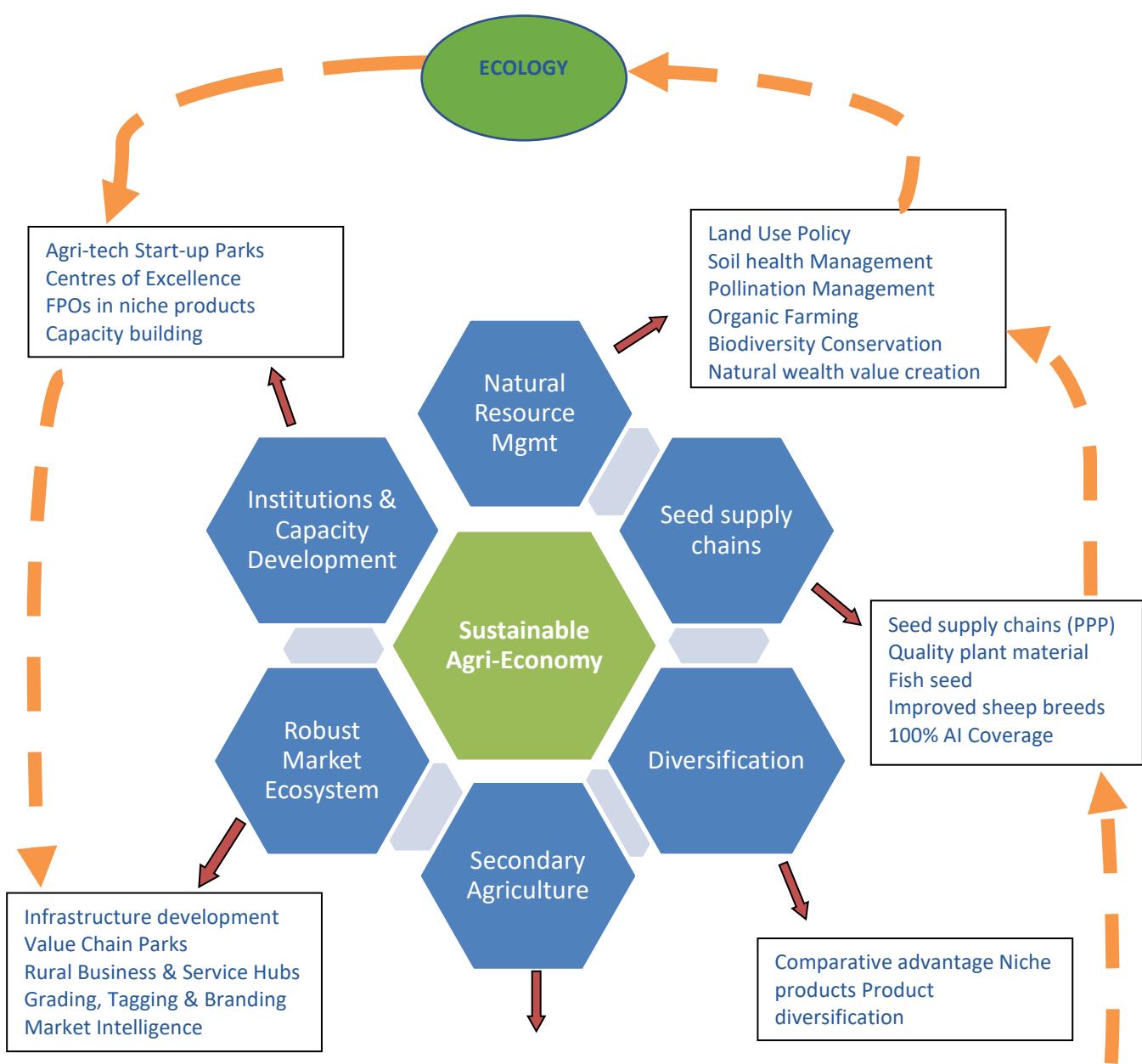
- d. Diversification:** The current land use pattern has not served the state in fulfilling its food and livelihood security imperatives, with 70% area being occupied by three major food crops yet leaving a food deficit of 40%. Diversification will help farmers to be more self-reliant on account of increased income as well as lead to optimum resource use. This will also help UT towards integrated farming system involving diverse crops and commodities that will lead to waste recycling. The diversification towards high value crops and commodities will lead to greater income to small and marginal farmers. The national action plan also calls for 2-4 % area replacement per annum for food crop area in all states based on regional strengths that will lead to 20-25 % increase in farm income in J&K state.
- e. Processing and value addition:** J&K has huge potential for promoting value added and processed food as this sector is yet to be harnessed with just 2% of farm produce going to processing. Food processing has multiple spin off benefits: It reduces food wastage (currently 30%), Increases value and shelf life, creates employment and entrepreneurship and links farms to new markets and industries.
- f. Re-orientation in Livestock Sector Strategies:** Focus shall be converged on processing sector of milk with backward and forward linkage. Emphasis should be on strategies to enhance mutton yield per sheep & goat through import of muttonous breed which attain a marketable age in a span of 5-6 months to cater huge demand in J&K. Processing and value addition in case of secondary products in shape of wool and pelt shall also be taken care-off. J&K has privilege of being No. 1 in trout production, so interventions to enhance production along with processing and value addition to make it available in other parts of the country. The huge import bill of poultry products offers an opportunity to develop local enterprises. There is a need to develop sustainable models for production

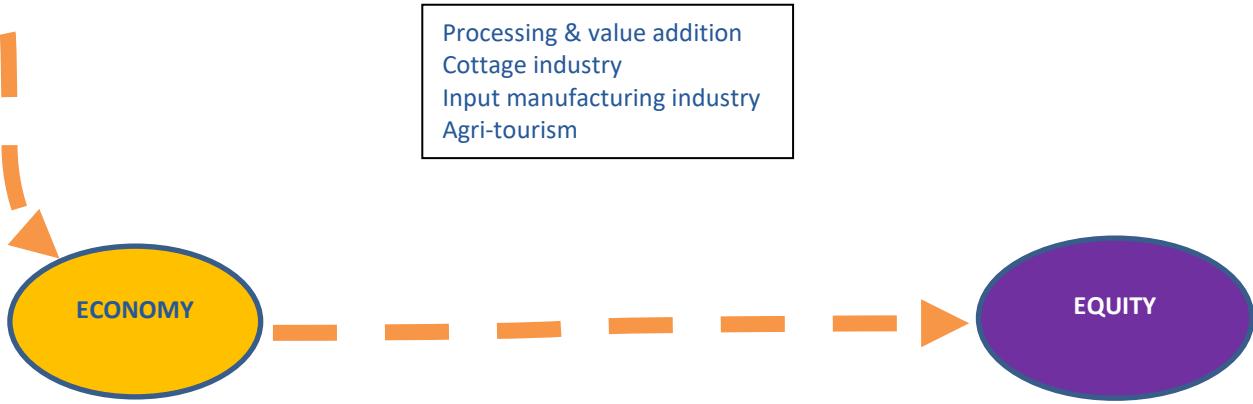
of eggs and poultry meat in the sector. Horti-poultry models for development of low input breeds should also be explored. Feed & Fodder availability is the single most important factor on which sustainability of livestock depends. The UT should have a well-defined fodder development policy for enhancing fodder cultivation and use of fallow lands to augment the feed and fodder sector.

- g. Fringe Community Development:** Funding, technical, monitoring, evaluation and policy support for poverty alleviation, fringe community development and upliftment of marginal and landless farmers for holistic development of agricultural and allied sectors in 20 districts of J&K.
- h. Technology and Innovations for Commercial Agriculture:** The future of farming is undoubtedly driven by technology, automation and mechanisation. AI and ML aided machines and decision support system will be key to our ability to be competitive in global market. This will also increase resource use efficiency and labour appropriation. We envisage to develop DSS for farm operations from field to fork encompassing all elements of chain such as precision agriculture, nano-inputs, irrigation systems and mechanisation.
- i. Entrepreneurship and market linkages:** Envisaging a significant increase in farm output in mainstream as well as secondary agriculture, there is a need to encourage entrepreneurship in diverse areas of farm business to capture value for all the farm produce. Also need for policy support for branding, certification, market linkages for foraging national and international markets. The immediate concern is to connect the produce with as many markets as possible and the business model requires linking the source with target markets, and planning a delivery or settlement mechanism after farm-gate procurement. The new architecture of marketing channels will aim to interconnect the farmers with multiple marketing opportunities.
- j. Bio-fortification for nutritional security:** Malnutrition and undernutrition driven stunting and wastage is a major impediment to national development causing huge GDP losses. In J&K over 1.5 million children below the age of five are suffering from acute malnutrition and 2.5 lac are stunted, while 3 million women are anaemic and under-weight (Niti Ayog, 2021).
- k. Climate Resilience:** J&K state needs to build its adaptive capacity to climate change by shifting to climate resilient agriculture. This demands development of climate resilient crops and breeds, resilient management practices, infrastructure and decision support system. In a state like J&K there is a need to analyse climate

risk patterns, mapping of impacts and develop technology-based interventions to minimise exposure and vulnerability to climate change.

- I. **Science for doubling farmer's income:** Improving farmer's income and livelihood will be driven largely by science-based solutions. However, there is a need to change the R&D mindset from **SCIENCE OF DISCOVERY** to **SCIENCE OF DELIVERY**. Scientific research should be directed at convergence, optimisation, and resource use efficiency for improving rural livelihoods. The R&D system needs to address multiple developmental challenges such as efficient and inclusive growth, sustainable natural resource management and environmental safety, food safety, monitoring and management of emerging nutritional security threats.





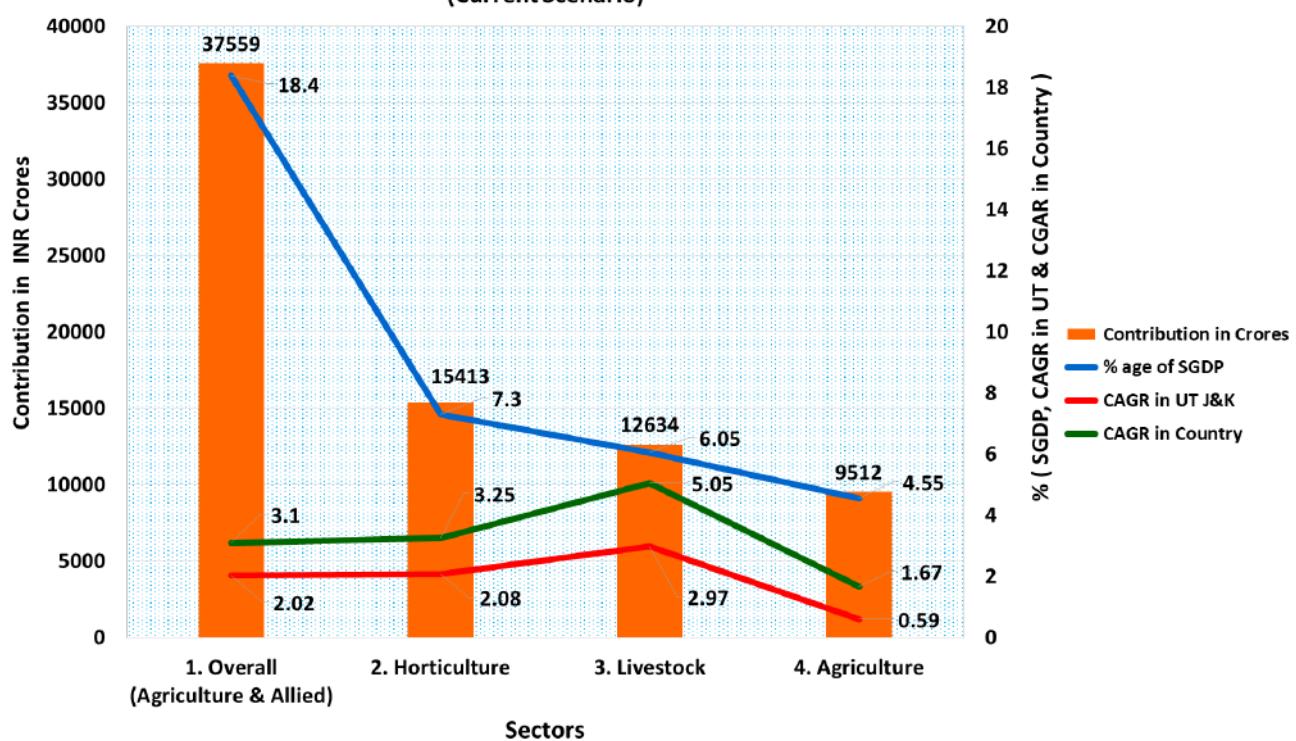
**Graphical Representation for Proposed Strategic Bio-Economy Model of J & K**

## 6. Approved projects & expected outcomes

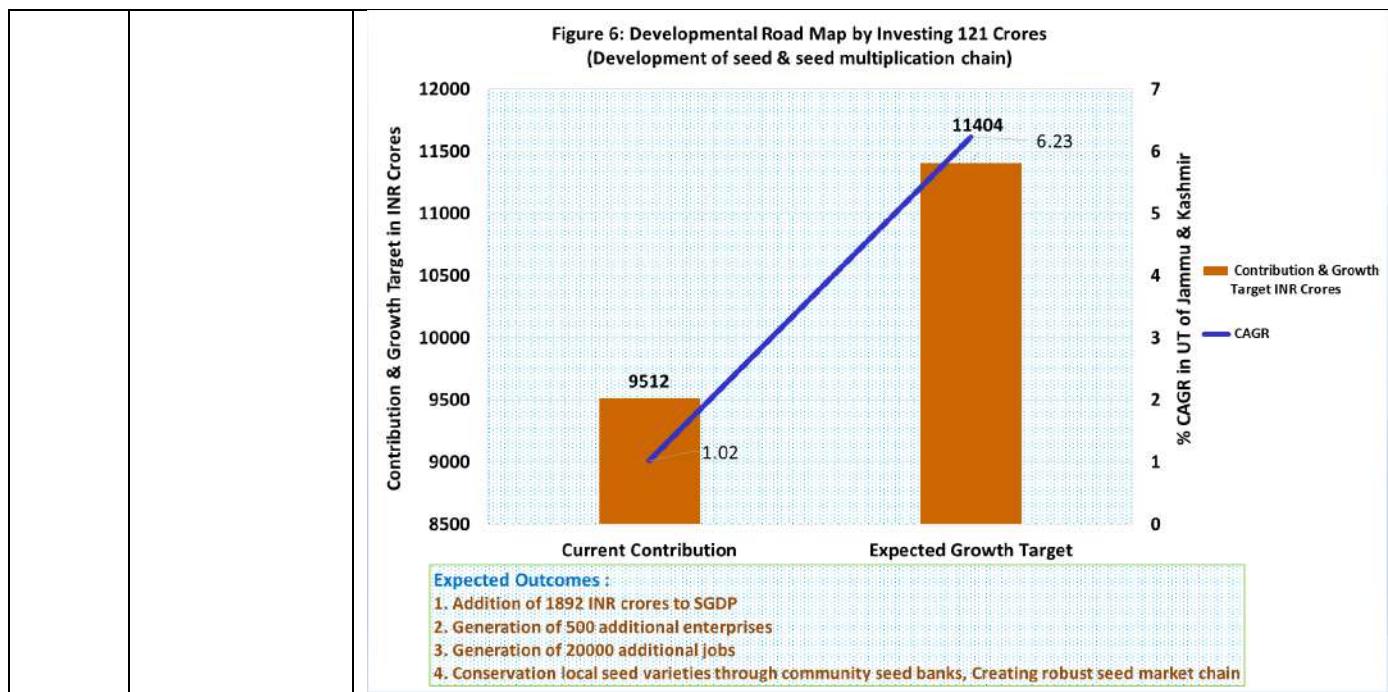
A number of project proposal on various important themes were development by Technical Working Committees for the holistic development of agricultural sectors of J&K UT. Presentation of these proposals were made before UT level APEX committee and approved in principle by Hon'ble Lieutenant Governor Shri Manoj Sinha ji. The various approved projects are expected to increase value of agricultural products mani-folds and on sustainable long-term basis.

**Agriculture & Allied Sectors Contribution to GDP (Current Scenario of UT J&K Base for Project Formulation) :**

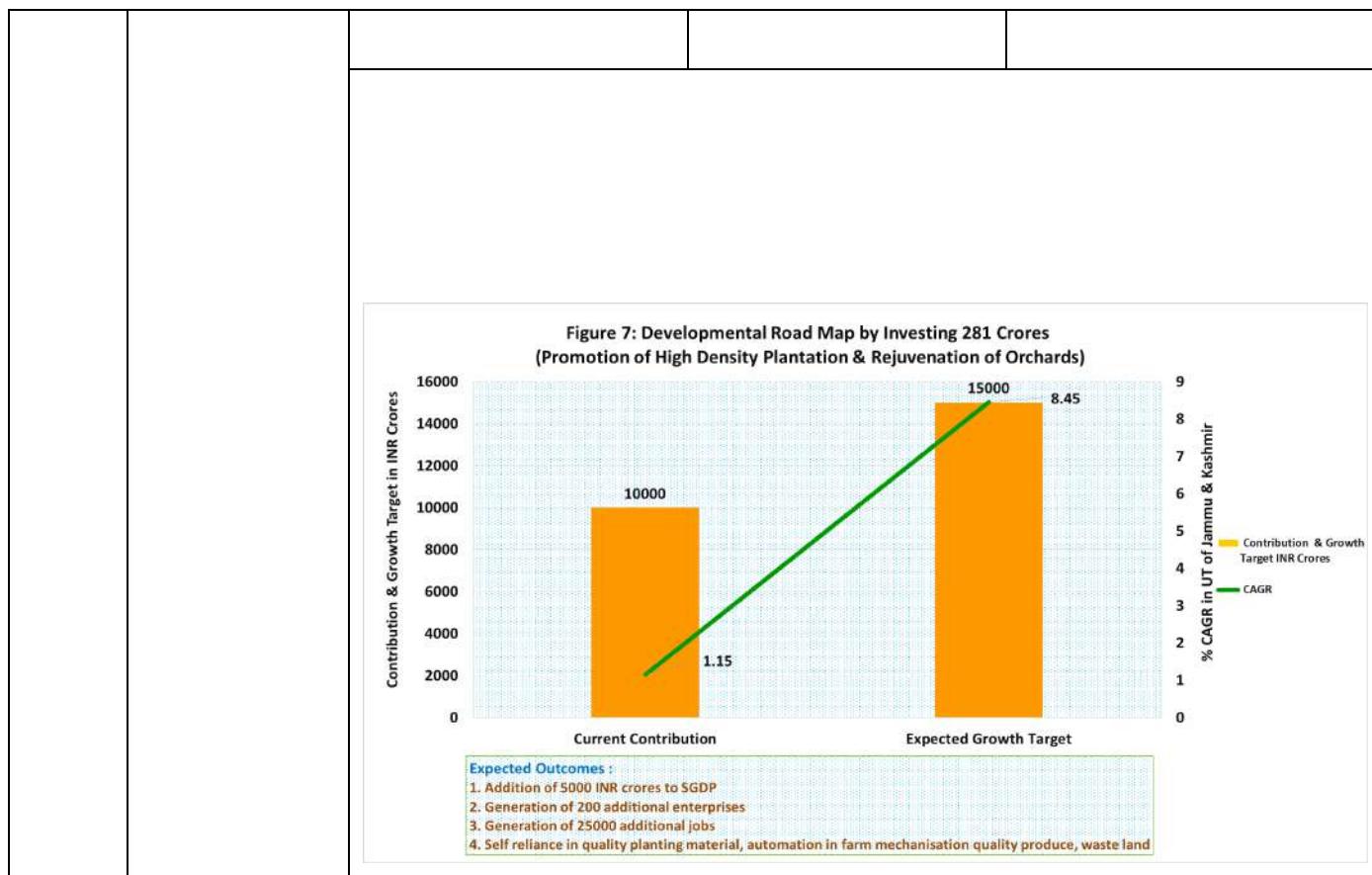
**Figure 5: Agriculture & Allied Sectors Contribution to GDP UT of J & K  
(Current Scenario)**



<b>S. No.</b>	<b>Project Title</b>	<b>Intervention</b>	<b>Output</b>	<b>Outcome</b>	
1	Development of Seed and seed multiplication chain in PPP mode	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• Seed deficit of 65% (259616 MT) to achieve recommended SRR</li> <li>• Low availability of quality seeds – capital flight of 500 crores</li> <li>• Great demand for quality seeds – Export Potential</li> </ul>	<ul style="list-style-type: none"> <li>➤ Creation and incentivization of primary seed producers &amp; seed producers orgs</li> <li>➤ Stakeholders involvement in PPP mode</li> <li>➤ Efficient seed market chain &amp; protected cultivation</li> <li>➤ R&amp;D and HRD</li> </ul>	<ul style="list-style-type: none"> <li>✓ 500 enterprises created (PSPs &amp; SPOs of skilled agriprenuers)</li> <li>✓ 12000 Secondary Seed Producers (Contract Farms)</li> <li>✓ Additional 2000 crores in returns to farmers</li> <li>✓ 20,000 jobs at secondary seed farms</li> </ul>	<ul style="list-style-type: none"> <li>✓ Creation of a robust seed market chain</li> <li>✓ SRR &amp; VRR at recommended levels</li> <li>✓ HR Development in form of skilled agriprenuers</li> <li>✓ Conservation of local seed varieties through community seed banks</li> <li>✓ Seed sufficiency and up to 28% improvement in overall returns to farmers</li> </ul>



S. No.	Project Title	Intervention	Output	Outcome
2	Production of designer plants for promotion of HD plants and rejuvenation of orchards	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>Dependence on import of HD plantation material (90%)</li> <li>Importation also introduces new pests and diseases</li> <li>Mixing of varieties due to lack of Identification</li> <li>Schemes to boost HD plantation not picking up due to dearth of planting material</li> </ul> <p>➤ Production of elite planting material</p> <p>➤ Mechanization, automation &amp; protected cultivation</p> <p>➤ Rejuvenation of orchards</p> <p>➤ Capacity building</p>	<ul style="list-style-type: none"> <li>✓ 7500 ha additional area brought under fruit cultivation</li> <li>✓ 11 million plantation created.</li> <li>✓ 200% increase in productivity in existing orchards</li> <li>✓ Establishment of 6 micro-propagation labs</li> <li>✓ 200 new enterprises (Nurseries)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Employment generation</li> <li>✓ R&amp;D for certification, quality testing, diagnostic &amp; micro-propagation</li> <li>✓ Self-reliance in plantation material</li> <li>✓ Training &amp; skill development of farmers</li> </ul>



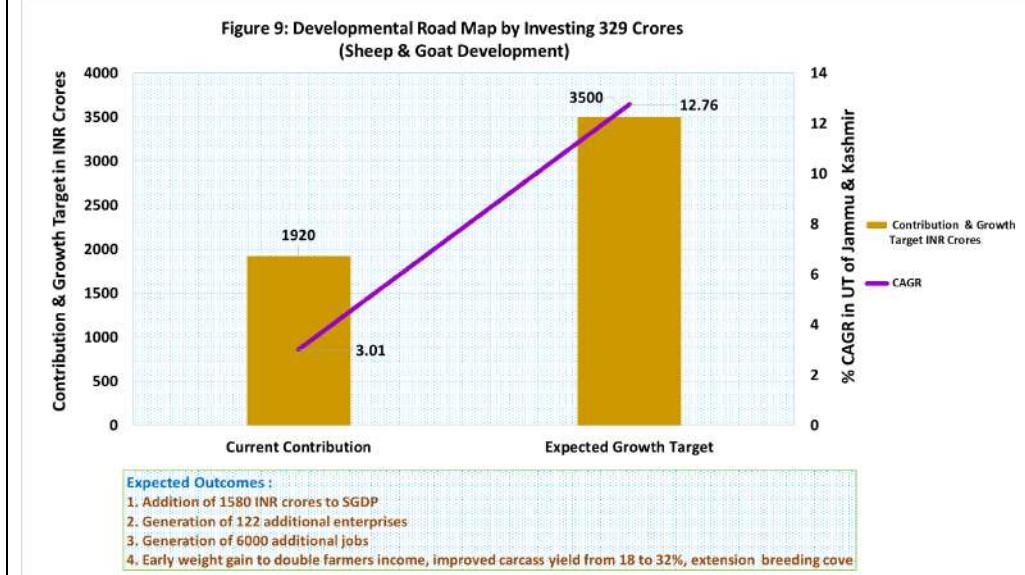
S. No.	Project Title	Intervention	Output	Outcome
3	Dairy Development in J&K	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>• Large dairy population with low productivity</li> <li>• Only 30% dairy animals being provided breeding coverage</li> <li>• 20,000 dairy animals of unknown merit being imported every year</li> <li>• Only 3-4% milk enters organized processing (National Average 35%)</li> </ul> <p>➤ Enhancing milk production by strengthening grassroots of dairy sector</p> <p>➤ Augment milk chilling &amp; processing capacity</p> <p>➤ Strengthen marketing &amp; value addition</p>	<p>✓ Increase AI centre from 1389 to 2189 through 800 Private AI worker</p> <p>✓ Double output from Semen Stations (9 to 19 lacs doses PA)</p> <p>✓ Sexed semen - 50% of doses</p>	<p>✓ 70% cattle within breeding coverage</p> <p>✓ Milk Production increased from 26 LMT to 44 LMT</p> <p>✓ Per Animal Productivity from 2400 LPA to 4300 LPA</p> <p>✓ 110 lakh Liter's additional milk, value added at</p>

			<ul style="list-style-type: none"> <li>✓ 400 satellite heifer rearing unit</li> <li>✓ Murrah Buffalo Breeding Farm</li> <li>✓ 500 AMCU's at Village levels</li> <li>✓ 50 5KL capacity BMC's</li> <li>✓ 500 SHGs/FPOs in milk umbrella</li> </ul>	<ul style="list-style-type: none"> <li>village levels every year.</li> <li>✓ 4 times increase in Milk Collection &amp; Chilling from 2 to 8.5 lakh LPD</li> <li>✓ Organized processing increased from 2 to 8.5 lakh LPD (7%)</li> </ul>
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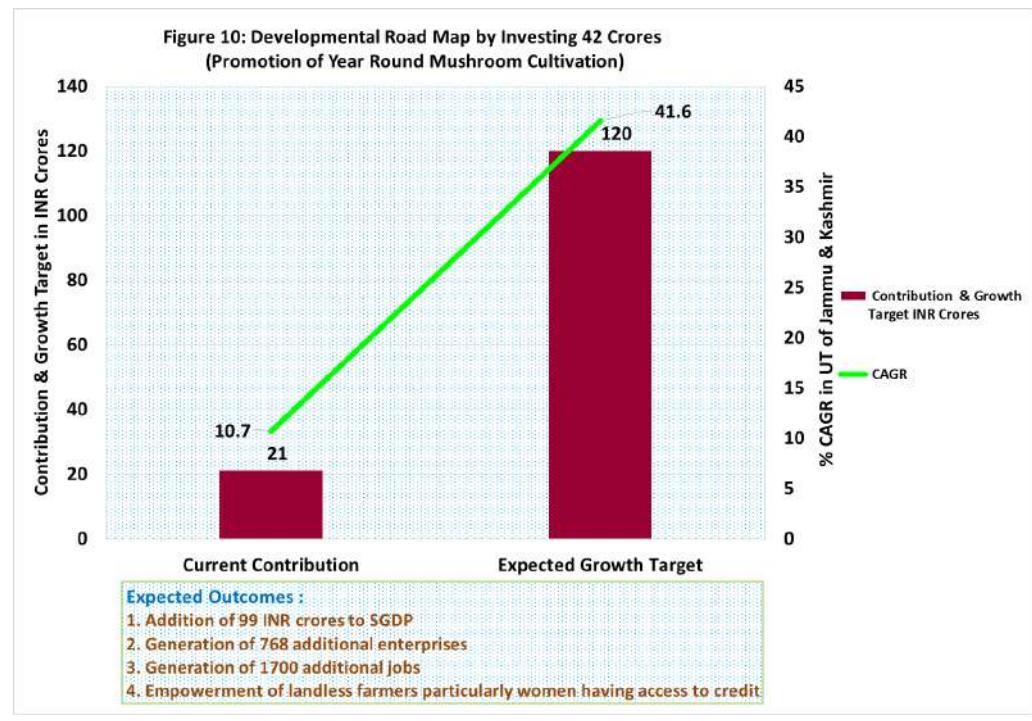
S. No.	Project Title	Intervention	Output	Outcome
4	Reorienting priorities: Self-sufficiency in mutton (Sheep & Goat) production in J&K	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>• Deficient in mutton by 41%</li> <li>• Annual Import bill of around ₹1400 crores</li> <li>• Competitive advantage &amp; Potential to become self-reliant</li> <li>• Consumer at risk; non FSSAI compliant</li> </ul> <p>➤ Vertical upgrade ➤ Import of muttonous breeds ➤ ETT &amp; AI ➤ Breed based farms</p>	<ul style="list-style-type: none"> <li>✓ 2700 elite sheep &amp; goat imported</li> <li>✓ Marketable weight achieved in 6</li> </ul>	<ul style="list-style-type: none"> <li>✓ Farm income doubled with early weight gain</li> <li>✓ Improved carcass yield; increment in production by 18-32%</li> </ul>

	<ul style="list-style-type: none"> <li>➤ Horizontal expansion</li> <li>➤ Commercial farms</li> <li>➤ Health cover &amp; nutrition</li> <li>➤ Focus on prophylaxis</li> <li>➤ Marketing &amp; value addition</li> <li>➤ Clusterization, cfcs, mandis, abattoirs</li> <li>➤ R&amp;D, HRD &amp; knowledge partners (MoU)</li> </ul>	<ul style="list-style-type: none"> <li>months (40-50 Kg)</li> <li>✓ Lambing% increase from 80 to 120</li> <li>✓ Elite germplasm propagation ETT (1000/year)</li> <li>✓ 100000 AI per year</li> <li>✓ 72 breed base farm</li> <li>✓ New 400 commercial farms every year (5-year)</li> <li>✓ 50 enterprises including 10 new abattoirs integrated with sheep mandis (10), CFCs (50)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Mutton production boosted through farms</li> <li>✓ Extension of breeding cover to all animals</li> <li>✓ Reduction in lamb mortality</li> <li>✓ Effective health cover preventing production losses by 20-30%</li> <li>✓ Quality and safe meat for consumers and higher returns for farmers</li> </ul>
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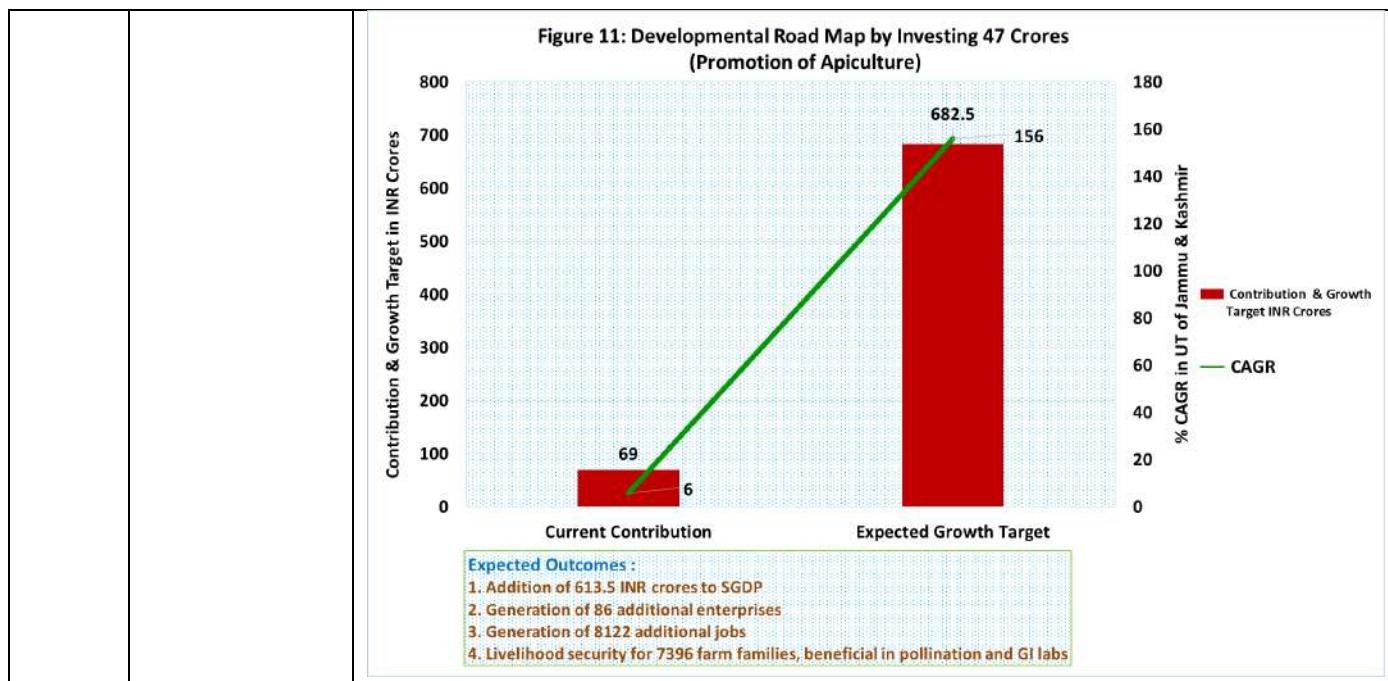


S. No.	Project Title	Intervention	Output	Outcome
5	Promotion of Mushroom Cultivation	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• Traditional cultivation methods leading to low quality &amp; quantity of produce</li> <li>• Unskilled farmers unable to harness full potential</li> </ul>		

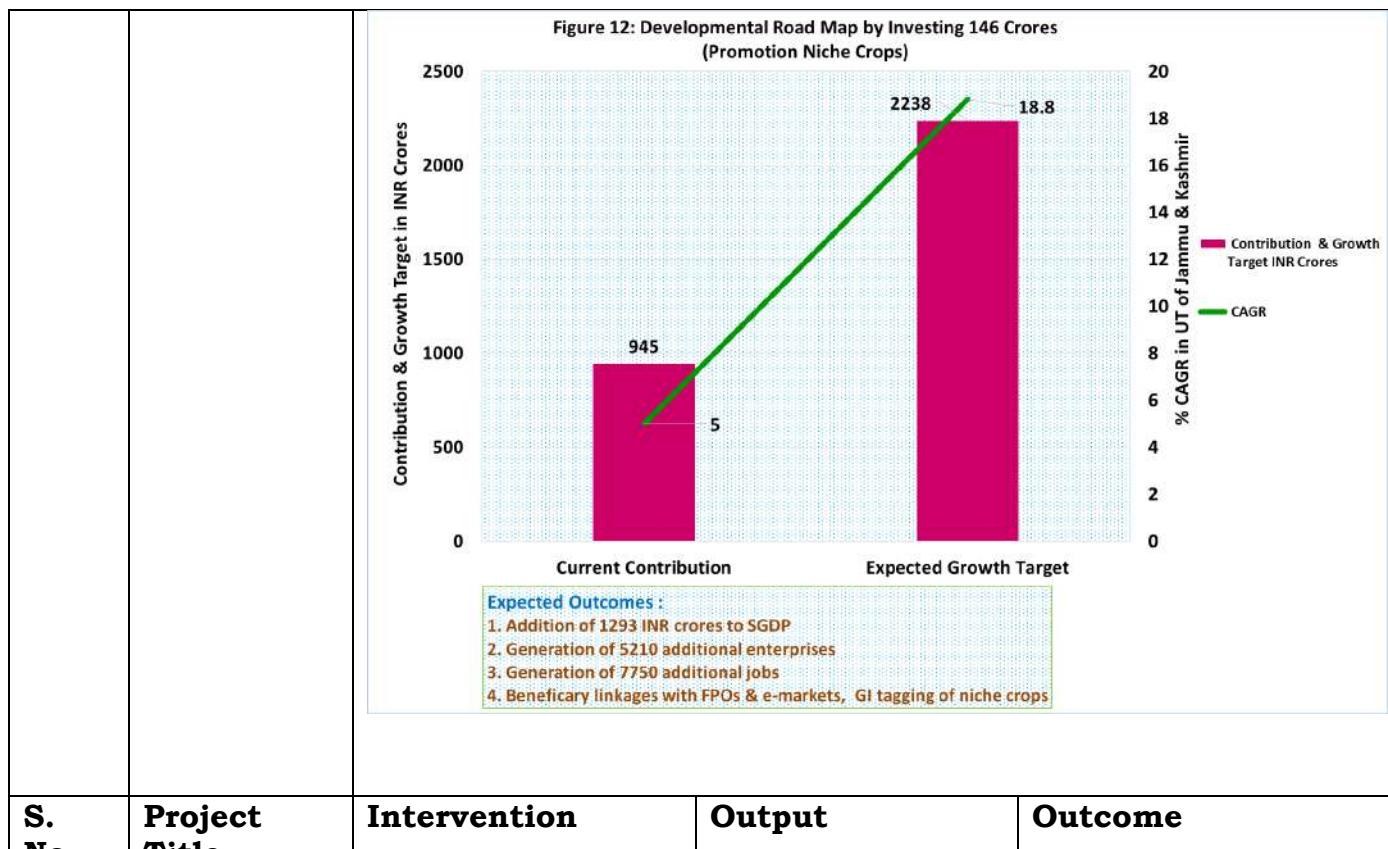
		<ul style="list-style-type: none"> <li>Highly perishable - market linkages essential to boost farmer confidence</li> </ul>
		<ul style="list-style-type: none"> <li>➤ Production &amp; growth</li> <li>➤ Aggregation, PHM, value addition &amp; market linkage</li> <li>➤ Research &amp; development</li> </ul> <ul style="list-style-type: none"> <li>✓ 26 pasteurized compost making units</li> <li>✓ 72 controlled condition cropping rooms</li> <li>✓ 10 spawn production labs</li> <li>✓ 1.5 lac pasteurized compost bags</li> <li>✓ 4 mushroom canning units</li> <li>✓ 60 solar drying units</li> <li>✓ 300 women SHGs</li> <li>✓ Skill development of 6600 farmers</li> </ul> <ul style="list-style-type: none"> <li>✓ Increase by 3-4 times in mushroom output from 21,000 to 78,000 quintals</li> <li>✓ Increased productivity of farmers</li> <li>✓ Three times increase in number of growers – from 2570 to 6610</li> <li>✓ Empowerment of small landless farmers and women.</li> <li>✓ Ensuring year round cultivation of mushrooms – harnessing off season potential.</li> </ul>



<b>S. No.</b>	<b>Project Title</b>	<b>Intervention</b>	<b>Output</b>	<b>Outcome</b>
<b>6</b>	Promotion of Apiculture	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• Diminishing population of native bees</li> <li>• Lack of migration practices leading to low quantity/quality</li> <li>• Less productivity with no mechanism for quality increase</li> <li>• Bee numbers directly affect produce from fruit sector</li> </ul> <ul style="list-style-type: none"> <li>➢ Strengthening &amp; distribution of bee colonies through cluster/SHGS/F POS</li> <li>➢ Production of nucleus stock and bee breeders</li> <li>➢ Setting up of GI labs</li> <li>➢ Centre of excellence for constancy, capacity building and post-harvest management</li> <li>➢ R&amp;D</li> </ul>	<ul style="list-style-type: none"> <li>✓ 333% increase in Bee population to 5 lacs (1,43,000 new bee colonies)</li> <li>✓ Tripling of Honey Production from 22000 to 66100 Quintals</li> <li>✓ Generation of additional 475 crores by sale of by-products</li> <li>✓ 20 CHC for extending pollination facilities</li> <li>✓ Two Api-therapy centers</li> </ul>	<ul style="list-style-type: none"> <li>✓ Efficient growth of bee sector using native honeybees</li> <li>✓ Value addition by harnessing potential of by-products</li> <li>✓ Boost in pollination by deploying bee colonies – having spin-off effect on dependent sectors.</li> <li>✓ Monitoring &amp; traceability through GI labs</li> <li>✓ Livelihood security for 7,396 farmers</li> </ul>

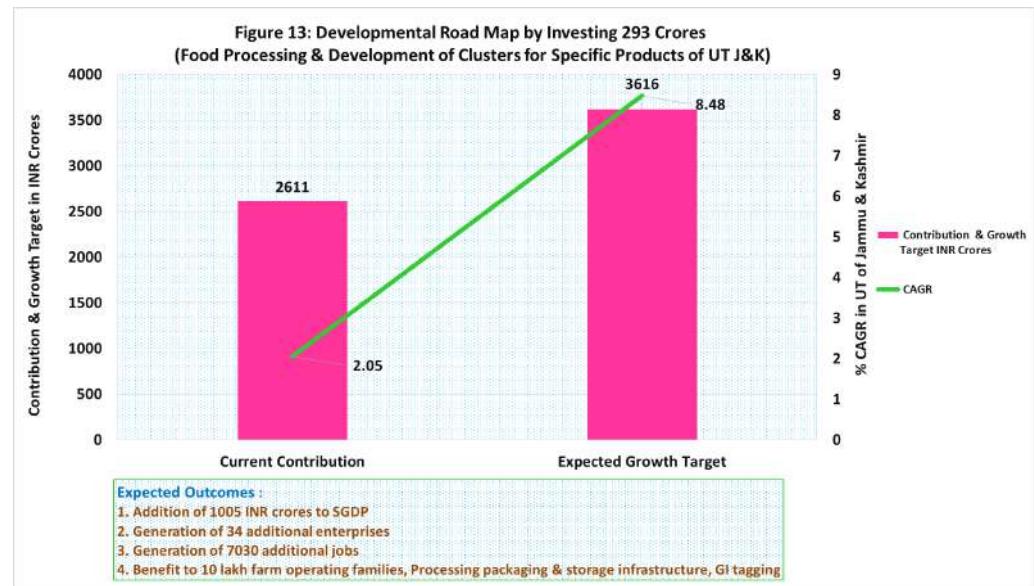


S. No.	Project Title	Intervention	Output	Outcome
7	Promotion of Niche crops in UT of J&K	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>• Cash crops in high demand include Saffron, Lal Mirch, Basmati, Baderwah Rajmash, Kala Zeera etc.</li> <li>• Lack of Commercial value chain &amp; traceability</li> <li>• Not enough quality planting material</li> </ul> <p>➤ Production of quality planting material</p> <p>➤ Diversification &amp; area expansion</p> <p>➤ Value addition &amp; marketing</p> <p>➤ R&amp;D and HRD</p>	<ul style="list-style-type: none"> <li>✓ 11,000 ha new area under cultivation (by conversion)</li> <li>✓ 5182 new nurseries &amp; 44 seed villages</li> <li>✓ 21590 quintal seeds, 40,000 plants &amp; 10 crore seedlings distributed</li> <li>✓ 6400 agripreneurs trained</li> </ul>	<ul style="list-style-type: none"> <li>✓ Beneficiary linkages with FPOs &amp; e-Markets</li> <li>✓ GI tagging of niche crops</li> <li>✓ Skilled workforce</li> <li>✓ High quality produce</li> <li>✓ Economic gains of farmers</li> </ul>



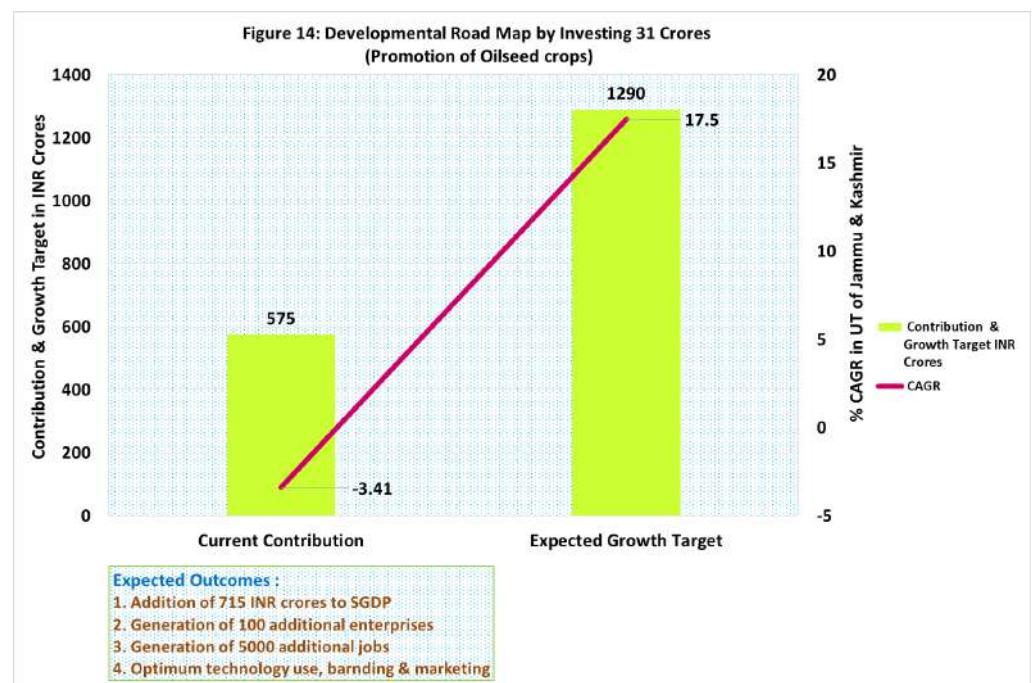
S. No.	Project Title	Intervention	Output	Outcome
8	UT level food processing program for development of clusters for specific products of J&K	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• Inadequate infrastructure for processing &amp; value addition</li> <li>• Full benefits of clusterization cannot be realized</li> <li>• Wide range of agri-produce can be made lucrative</li> <li>• Existing proof of concept for the approach proposed</li> </ul> <p>➤ Pre-production and production vertical can be implemented in convergence with line departments</p> <p>➤ Interventions in post-harvest management and value addition vertical for the identified products</p> <p>➤ Interventions in logistics,</p>	<ul style="list-style-type: none"> <li>✓ 7 products in 17 districts in clusters</li> <li>✓ 20 Lakh MT produce handled</li> <li>✓ 5 Mega Clusters established with grant of INR 50 crore each.</li> <li>✓ One Midi-Cluster (Cherry) with grant of INR 25 crores</li> </ul>	<ul style="list-style-type: none"> <li>✓ 20+ Lakh Farmers/Farm Operating Families (FoFs) benefit</li> <li>✓ Dynamic Food Processing, Food Packaging and storage Infrastructure</li> <li>✓ Farm level logistics and transportation</li> <li>✓ Marketing Infrastructure and Cluster Branding (GI tagging)</li> </ul>

		marketing and branding vertical	<ul style="list-style-type: none"> <li>✓ One Mini Cluster (Trout) with grant of INR 12.5 crores</li> <li>✓ 2% additional produce entering food processing &amp; Value addition</li> </ul>	<ul style="list-style-type: none"> <li>✓ Expected Revenue generation to the tune of INR 1436.04 crores in a span of 04 years</li> </ul>
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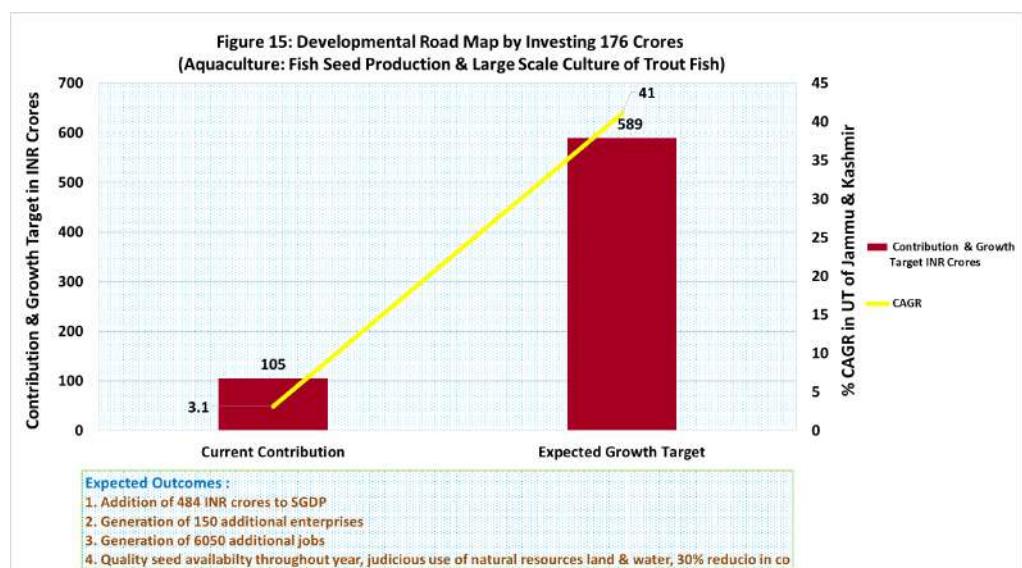
S. No.	Project Title	Intervention	Output	Outcome
9	Promotion of oilseeds	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>• Production not commiserate with huge demand for edible oils</li> <li>• Non availability of suitable HYV/ hybrid varieties</li> <li>• Poor facilities for marketing and value addition</li> <li>• Poor oil extraction technology, low efficiency of processing.</li> </ul> <p>➤ Covering additional 70,000 ha area under oilseed crops through crop diversification</p>	<ul style="list-style-type: none"> <li>✓ 10700 ha area under cluster</li> <li>✓ 72000 ha of existing area covered under INM/IPM</li> </ul>	<ul style="list-style-type: none"> <li>✓ Two times output of oil seeds boosting co-produce systems</li> <li>✓ Optimum technology use, INM/IPM, farm</li> </ul>

		<ul style="list-style-type: none"> <li>➤ Increase cropping intensity and SRR with effective market linkages &amp; value addition</li> <li>➤ Capacity building and entrepreneurship development</li> </ul>	<ul style="list-style-type: none"> <li>✓ 300 deep bore well/ sprinkler irrigation</li> <li>✓ 100 Oil seed extraction units for VA</li> <li>✓ Training of 30,000 farmers in oil seed production</li> <li>✓ Increase in productivity from 800 to 1200 kg/ha</li> </ul>	<ul style="list-style-type: none"> <li>✓ mechanization, Irrigation etc.</li> <li>✓ Branding, marketing linkage and sale of Edible Oils through FPOs</li> <li>✓ Area under cultivation increases from 1.4 lac ha to 2.1 lac ha</li> </ul>
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S. No.	Project Title	Intervention	Output	Outcome
10	Aquaculture Development in J&K	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• Huge gap between demand and production</li> <li>• Age old infrastructure and inbreeding depression in stocks</li> <li>• Absence of modern technologies make sector vulnerable to changes in water availability</li> </ul>		

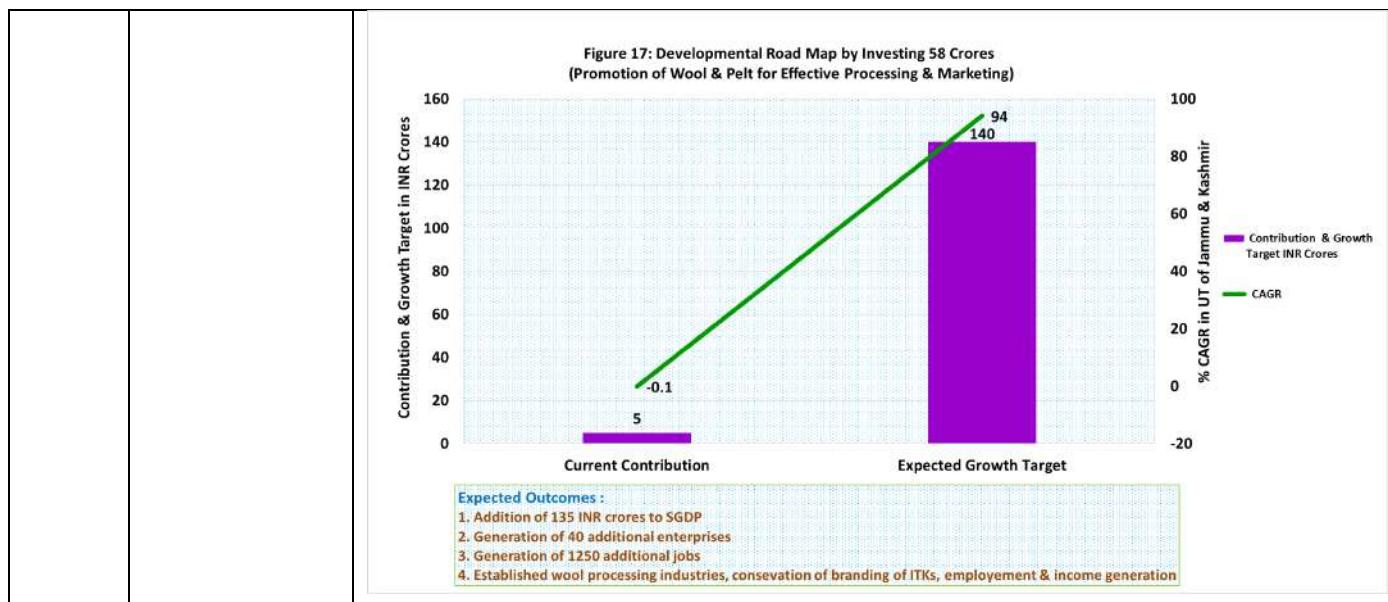
	<ul style="list-style-type: none"> <li>➤ Import of genetically improved variety of fish seed</li> <li>➤ Establishment &amp; upgradation of the hatcheries/fish rearing units</li> <li>➤ Establishment of new hatchery units in clusters mode</li> <li>➤ Production &amp; postharvest management</li> </ul>	<ul style="list-style-type: none"> <li>✓ 100 lakh eyed ova imported from Sweden</li> <li>✓ Seed Production increased from 15 -30 million (Trout) &amp; 62 to 100 million (Carp)</li> <li>✓ 10 new hatcheries &amp; 12 modernized</li> <li>✓ Construction of 1100 raceways*</li> <li>✓ Construction of 500 (RAS)* &amp; 120 biofloc</li> <li>✓ 4 cold storage cum ice plants</li> <li>✓ Four (4) Disease/Quality Testing labs</li> <li>✓ 13 new fish feed mills*</li> </ul>	<ul style="list-style-type: none"> <li>✓ Availability of good quality seed throughout the year</li> <li>✓ Judicious use of land &amp; water resources</li> <li>✓ 30% reduction in cost of seed and 35% increase in survival rate.</li> <li>✓ Double fish production (Trout additional =1700 tonnes, Carps additional= 1200 tonnes).</li> <li>✓ 100% increase in farmer income</li> <li>✓ Increase in shelf life.</li> <li>✓ Post-harvest loss reduction (28%)</li> </ul>
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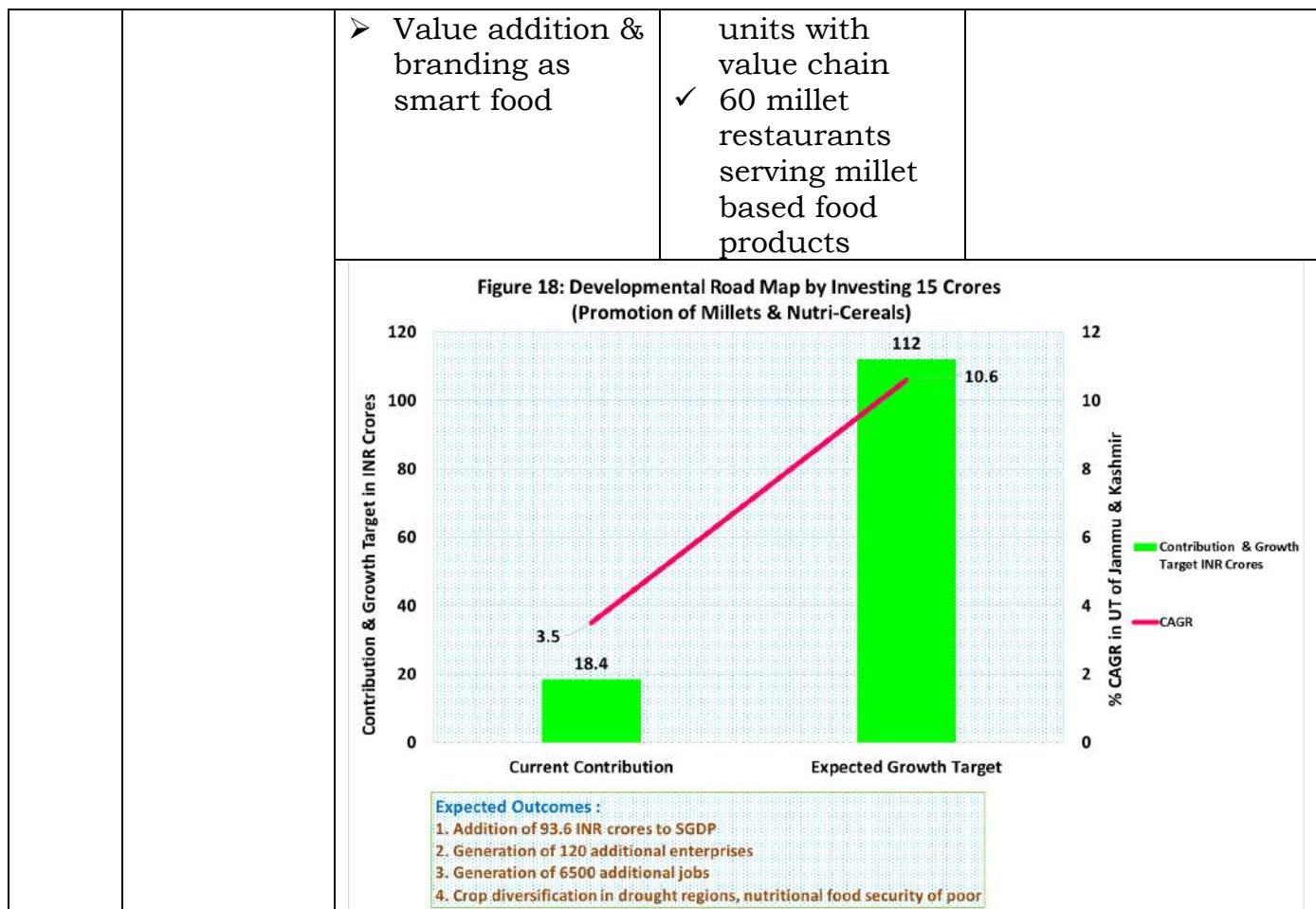
S. No.	Project Title	Intervention	Output	Outcome

11	<p>Promotion of vegetables/exotic vegetables under open and hi-tech protected cultivation</p>	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>Seasonal dependence on imports to meet vegetable demands</li> <li>Farmers suffer low productivity because of no knowhow of high-tech farming</li> <li>High potential for export of exotic veg crops</li> </ul> <table border="1" data-bbox="463 422 1495 1105"> <tbody> <tr> <td data-bbox="463 422 781 1105"> <ul style="list-style-type: none"> <li>➤ Horizontal &amp; vertical expansion of vegetable crops</li> <li>➤ Promotion of exotic &amp; high value crops</li> <li>➤ Off season vegetable cultivation</li> <li>➤ Precision farming techniques</li> </ul> </td><td data-bbox="781 422 1114 1105"> <ul style="list-style-type: none"> <li>✓ 1100 new hi-tech green houses</li> <li>✓ 3548 new poly-houses (Vegetable nurseries)</li> <li>✓ Production increased from 1991 to 2587 TMT</li> <li>✓ Cropping intensity increased from 165 to 250%</li> <li>✓ A surplus of 68 (000' MT) in 5<sup>th</sup> year</li> </ul> </td><td data-bbox="1114 422 1495 1105"> <ul style="list-style-type: none"> <li>✓ Self-reliance in vegetables with potential to export quality &amp; exotic crops</li> <li>✓ Popularization of hi-tech &amp; precision based farming</li> <li>✓ Value addition and market accessibility</li> <li>✓ Year round income security for farmers</li> </ul> </td></tr> </tbody> </table> <div data-bbox="463 1329 1495 2003"> <p><b>Figure 16: Developmental Road Map by Investing 400 Crores (Promotion of Vegetables &amp; Exotic Vegetables)</b></p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value (INR Crores)</th> <th>% CAGR (J&amp;K)</th> </tr> </thead> <tbody> <tr> <td>Current Contribution</td> <td>4840</td> <td>4.5</td> </tr> <tr> <td>Expected Growth Target</td> <td>8021</td> <td>10.6</td> </tr> </tbody> </table> <p><b>Expected Outcomes :</b></p> <ol style="list-style-type: none"> <li>Addition of 3181 INR crores to SGDP</li> <li>Generation of 4648 additional enterprises</li> <li>Generation of 47250 additional jobs</li> <li>Beneficiary linkages with FPOs &amp; e-markets, self reliance, export, value addition, Precision high-tech</li> </ol> </div>	<ul style="list-style-type: none"> <li>➤ Horizontal &amp; vertical expansion of vegetable crops</li> <li>➤ Promotion of exotic &amp; high value crops</li> <li>➤ Off season vegetable cultivation</li> <li>➤ Precision farming techniques</li> </ul>	<ul style="list-style-type: none"> <li>✓ 1100 new hi-tech green houses</li> <li>✓ 3548 new poly-houses (Vegetable nurseries)</li> <li>✓ Production increased from 1991 to 2587 TMT</li> <li>✓ Cropping intensity increased from 165 to 250%</li> <li>✓ A surplus of 68 (000' MT) in 5<sup>th</sup> year</li> </ul>	<ul style="list-style-type: none"> <li>✓ Self-reliance in vegetables with potential to export quality &amp; exotic crops</li> <li>✓ Popularization of hi-tech &amp; precision based farming</li> <li>✓ Value addition and market accessibility</li> <li>✓ Year round income security for farmers</li> </ul>	Category	Value (INR Crores)	% CAGR (J&K)	Current Contribution	4840	4.5	Expected Growth Target	8021	10.6
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Expected Growth Target	8021	10.6												

S. No.	Project Title	Intervention	Output	Outcome			
12	Promotion of wool/pelt for effective processing and marketing	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• J&amp;K produces the finest wool in country however, production is predominantly in unorganized sector</li> <li>• Potential to add more than 135 crores to the SR Sector every year</li> <li>• Huge potential for value addition by creation of processing &amp; marketing infrastructure</li> </ul> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="vertical-align: top; width: 40%;"> <ul style="list-style-type: none"> <li>➤ Collectivization and integration of wool</li> <li>➤ Creation of common facilitation centers</li> <li>➤ Revival of wool board</li> <li>➤ HRD &amp; RD</li> </ul> </td> <td style="vertical-align: top; width: 30%;"> <ul style="list-style-type: none"> <li>✓ Three times income to farmers from wool/pelt</li> <li>✓ 40 FPOs involved in aggregation &amp; processing of wool &amp; pelt</li> <li>✓ 20 CFC will be integrated with FPOs for extending primary processing facilities</li> </ul> </td> <td style="vertical-align: top; width: 30%;"> <ul style="list-style-type: none"> <li>✓ Greater livelihood security for sheep farmers</li> <li>✓ Boost to wool processing industry</li> <li>✓ Conservation &amp; branding of ITK's</li> <li>✓ Employment and Income generation</li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>➤ Collectivization and integration of wool</li> <li>➤ Creation of common facilitation centers</li> <li>➤ Revival of wool board</li> <li>➤ HRD &amp; RD</li> </ul>	<ul style="list-style-type: none"> <li>✓ Three times income to farmers from wool/pelt</li> <li>✓ 40 FPOs involved in aggregation &amp; processing of wool &amp; pelt</li> <li>✓ 20 CFC will be integrated with FPOs for extending primary processing facilities</li> </ul>	<ul style="list-style-type: none"> <li>✓ Greater livelihood security for sheep farmers</li> <li>✓ Boost to wool processing industry</li> <li>✓ Conservation &amp; branding of ITK's</li> <li>✓ Employment and Income generation</li> </ul>		
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S. No.	Project Title	Intervention	Output	Outcome
13	Promotion of Nutri cereals (Millets)	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>• J Hardy crops with low carbon and water footprint, withstand high temp poor soils</li> <li>• Inclination towards healthy cereal based food. Millets have found way to infant foods</li> <li>• Easy employment generation, entrepreneurship and doubling Income</li> </ul> <p>➤ Area expansion, cluster approach &amp; promotion of millets as a resilient crop especially in rain-fed &amp; kandi belts</p> <p>➤ Employ best cultivation technologies with improved varieties</p> <p>➤ Promoting millet processing enterprise and establishing market linkage</p>	<p>✓ Over 8000 ha traditional millet growing areas revived</p> <p>✓ Additional 6000 ha under millet cultivation (intercropping, mixed-cropping, fallow lands etc.)</p> <p>✓ Per hectare productivity doubled (10 to 20 quintals)</p> <p>✓ 60 millet processing</p>	<p>✓ Crop diversification in drought prone areas</p> <p>✓ Nutritional security for rural poor</p> <p>✓ Commercialization of millets through health products</p> <p>✓ Sustainable food source for combating hunger in changing climate</p> <p>✓ Strengthening of agro-processing of millets</p>

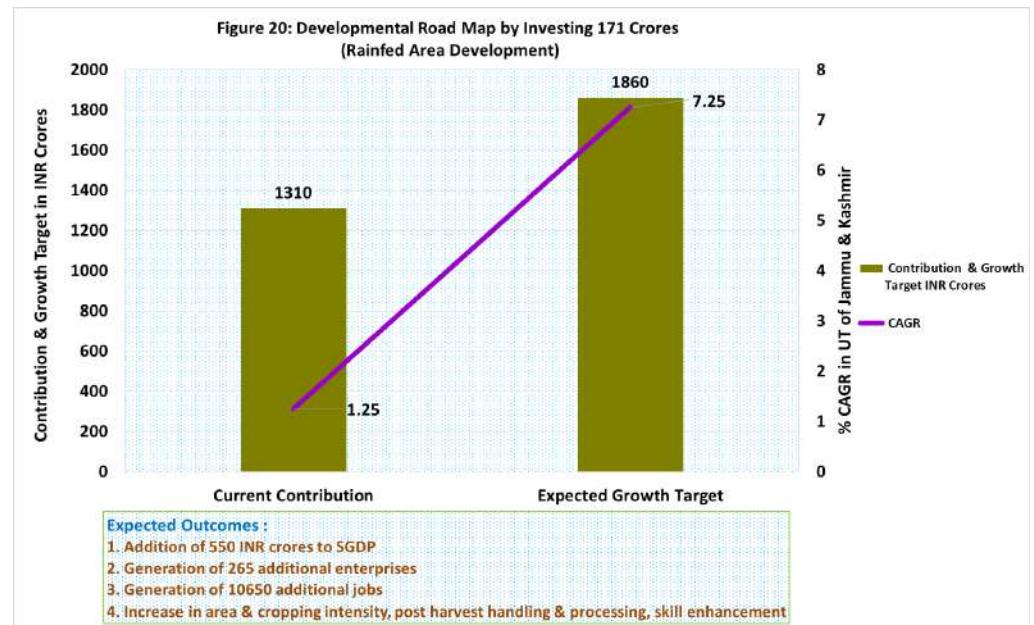


S. No.	Project Title	Intervention	Output	Outcome
14	Formulation of 300 FPO's	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• More than 95% of our farmers are S&amp;M – little buying &amp; bargaining capacity</li> <li>• Poor agriculture marketing facilities and prevalence of middleman-ship</li> <li>• FPOs boost integrated, multi-commodity approach aggregation &amp; value addition</li> </ul> <ul style="list-style-type: none"> <li>➤ Baseline assessment &amp; mobilization of farmers</li> <li>➤ Formation of FPOs and FIGs</li> <li>➤ Strengthening FPOs to enable multi commodity approach</li> </ul>	<ul style="list-style-type: none"> <li>✓ Mobilization of 60K farmers – 3000 FIGs (All Sectors)</li> <li>✓ Will cover all blocks of the UT</li> <li>✓ Job creation within backward (6.57</li> </ul>	<ul style="list-style-type: none"> <li>✓ Promotion in specific cluster &amp; better farm planning for crop productivity</li> <li>✓ Net returns to farmers increased by 10-12%</li> </ul>

			Lakh man-days) & forward linkage 21.90 Lakh man-days	✓ Reduction in input cost by 15-20%						
<p><b>Figure 19: Developmental Road Map by Investing 142 Crores (Formulation of 300 FPOs)</b></p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value (INR Crores)</th> </tr> </thead> <tbody> <tr> <td>Current Contribution</td> <td>1862</td> </tr> <tr> <td>Expected Growth Target</td> <td>3723</td> </tr> </tbody> </table> <p>% CAGR in UT of Jammu &amp; Kashmir</p> <p><b>Expected Outcomes:</b></p> <ol style="list-style-type: none"> <li>1. Addition of 1861 INR crores to SGDP</li> <li>2. Generation of 300 additional enterprises</li> <li>3. Generation of 7800 additional jobs</li> <li>4. Reduction in Input Cost, Development of farm produce hubs &amp; better market structures</li> </ol>					Category	Value (INR Crores)	Current Contribution	1862	Expected Growth Target	3723
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Current Contribution	1862									
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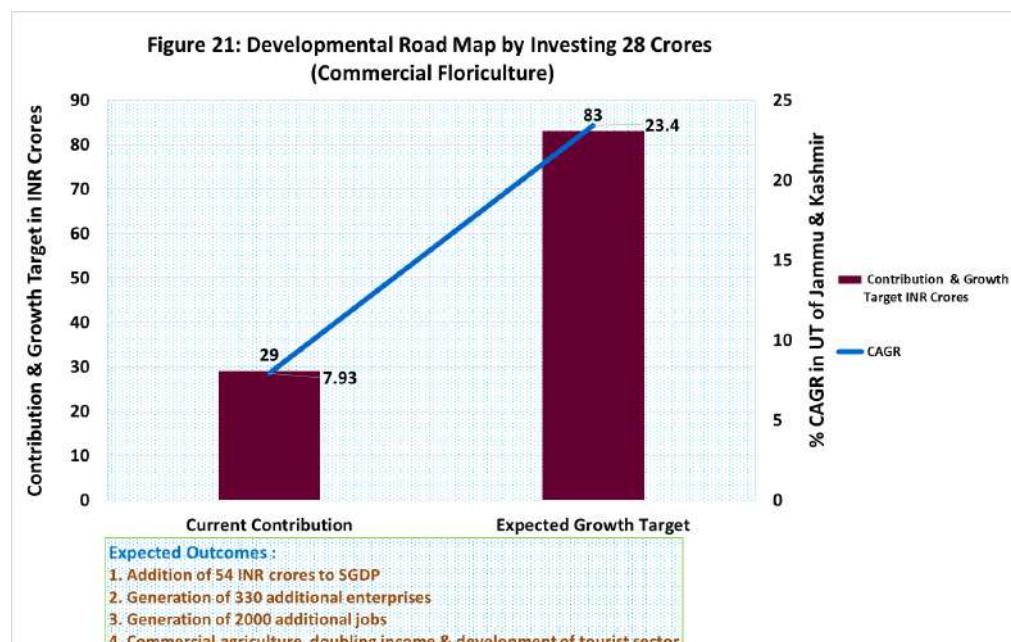
S. No.	Project Title	Intervention	Output	Outcome
15	Development of rain fed areas of J&K	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• Over 50% of cultivable land is rain-fed</li> <li>• Poor crop, livestock productivity &amp; quality of produce – Low Farmer Income</li> <li>• Disproportionate government support &amp; lack of linkages</li> </ul> <p>➤ Deploying climate resilient &amp; nutritionally smart crop varieties and improved breeds</p> <p>➤ Minimizing soil degradation through</p>	<p>✓ 5500 No's of Integrated Livelihood Systems (ILS)</p> <p>✓ 55000 farmer families engaged</p>	<p>✓ Increase in cropping intensity by two fold</p> <p>✓ High system based productivity</p> <p>✓ Creation of local jobs &amp; supplementary incomes</p>

		<p>agroforestry based approaches</p> <ul style="list-style-type: none"> <li>➤ Promoting IFS/ILS which encourages system based productivity</li> <li>➤ Improving access to institutional credit</li> <li>➤ Comprehensive insurance provision</li> </ul>	<ul style="list-style-type: none"> <li>✓ Skilled human resource of 15000</li> <li>✓ 30K ha area developed as per agroforestry interventions</li> <li>✓ Microfinancing through existing SHGs</li> </ul>	<ul style="list-style-type: none"> <li>✓ Scalable post-harvest handling &amp; Agro-processing facilities</li> <li>✓ Brand promotion and commercial value chain development</li> <li>✓ Skill enhancement</li> </ul>
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S. No.	Project Title	Intervention	Output	Outcome
16	Promotion of Commercial Floriculture	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• J&amp;K uniquely positioned to cater to the increasing demand for temperate flowers</li> <li>• J&amp;K has an insignificant contribution in the 15000 crore floriculture sector</li> </ul>		

in UT of J&K	<ul style="list-style-type: none"> <li>Huge potential for employment generation given geo-climatic diversity</li> </ul> <ul style="list-style-type: none"> <li>Up-gradation/capacity building of existing nurseries including post-covid revival of sick/closed units</li> <li>Area expansion by clusterization</li> <li>Capacity building &amp; aggregation</li> </ul>	<ul style="list-style-type: none"> <li>✓ 54 nursery units upgraded</li> <li>✓ 150 units re-operationalized</li> <li>✓ Additional 400 ha area under cultivation (total 587 ha)</li> <li>✓ 330 new enterprises</li> <li>✓ 2000 new growers in aromatic flower &amp; bulb/seed production</li> <li>✓ Over 27 crore ornamental nursery plants annually</li> <li>✓ 1200 L of Lavender annually (4 times growth)</li> </ul> <ul style="list-style-type: none"> <li>✓ Move towards commercial agriculture</li> <li>✓ Skilled manpower to enhance sectoral growth</li> <li>✓ Doubled output of existing farms by technology and capacity upgrades</li> </ul>
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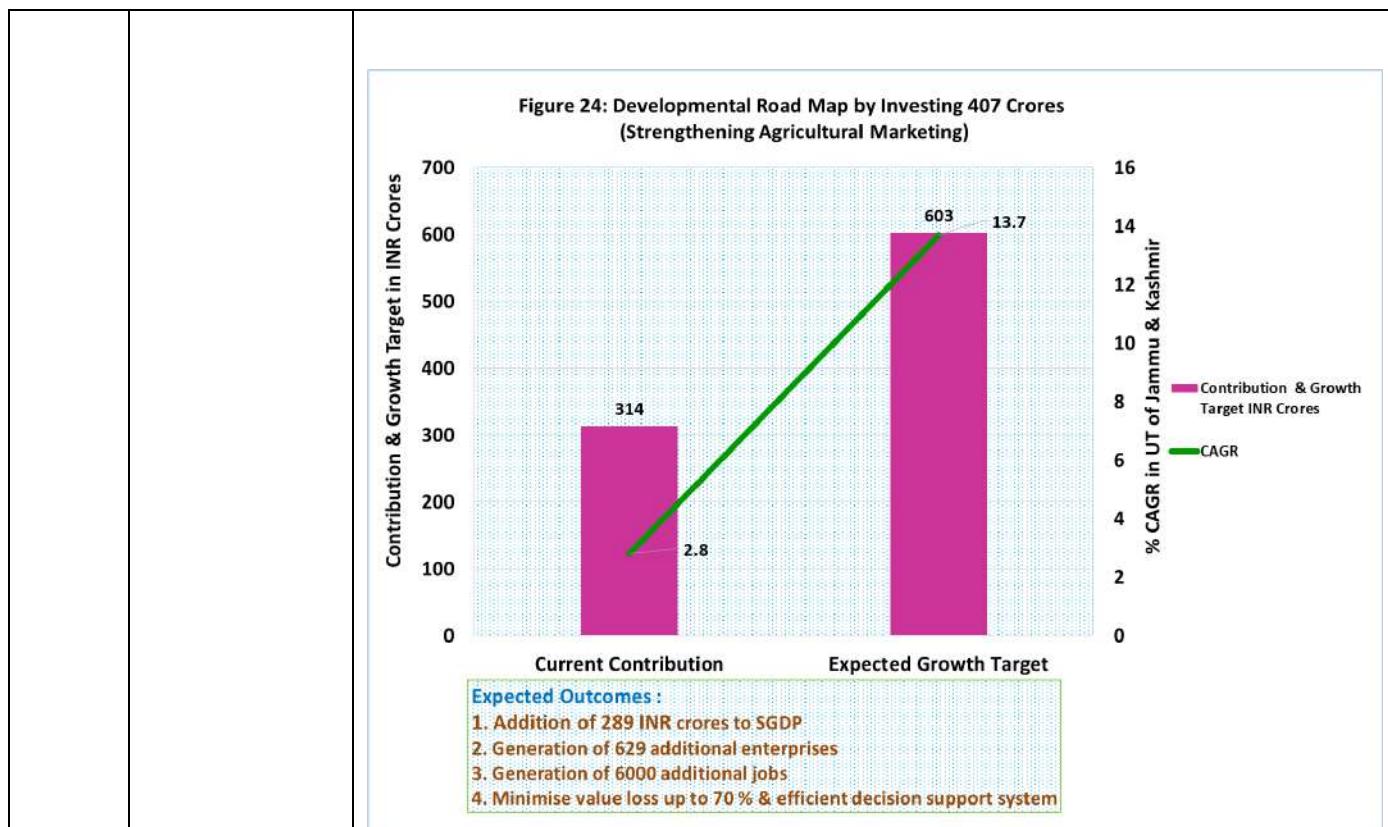


S. No.	Project Title	Intervention	Output	Outcome

17	Promotion of medicinal /aromatic plants on commercial basis	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>• JMAPs unique to our agro-climate offer potential for employment &amp; export</li> <li>• We have un-utilized cultivable land (require 2% of 129000 ha)</li> <li>• 30%-40% additional agricultural income for farmers who adopt cultivation of MAPs</li> <li>• Increased demand for herbal drugs and cosmetics</li> </ul> <table border="1"> <tbody> <tr> <td data-bbox="446 489 774 1102"> <ul style="list-style-type: none"> <li>➢ Cultivation and conservation of maps</li> <li>➢ Harvesting and post-harvest management</li> <li>➢ Branding and marketing</li> <li>➢ R&amp;D and HRD</li> </ul> </td><td data-bbox="774 489 1129 1102"> <ul style="list-style-type: none"> <li>✓ Sectoral growth from INR 0.02 to INR 74.76 crores (5 year) &amp; 783 crores (15 years)</li> <li>✓ 1-2 MAP farmer-producer cluster per district (<b>28 clusters</b>)</li> <li>✓ <b>5000 kanals</b> land under cultivation of MAPs</li> </ul> </td><td data-bbox="1129 489 1489 1102"> <ul style="list-style-type: none"> <li>✓ Strengthening of agricultural economy</li> <li>✓ Reduced stress on forests</li> <li>✓ Reduced value chain losses</li> <li>✓ Trained manpower &amp; skilled youth (3000)</li> <li>✓ Quality Products, Patents &amp; Designs</li> </ul> </td></tr> </tbody> </table> <div data-bbox="446 1327 1489 2010"> <p><b>Figure 22: Developmental Road Map by Investing 62 Crores (Promotion of Medicinal &amp; Aromatic Plants)</b></p> <table border="1"> <thead> <tr> <th>Current Contribution</th> <th>Expected Growth Target</th> <th>% CAGR</th> </tr> </thead> <tbody> <tr> <td>0.02</td> <td>783</td> <td>56</td> </tr> </tbody> </table> <p><b>Expected Outcomes :</b></p> <ol style="list-style-type: none"> <li>1. Addition of 782.98 INR crores to SGDP</li> <li>2. Generation of 28 additional enterprises</li> <li>3. Generation of 3000 additional jobs</li> <li>4. Reduced stress on forests &amp; value chain losses. Quality products</li> </ol> </div>	<ul style="list-style-type: none"> <li>➢ Cultivation and conservation of maps</li> <li>➢ Harvesting and post-harvest management</li> <li>➢ Branding and marketing</li> <li>➢ R&amp;D and HRD</li> </ul>	<ul style="list-style-type: none"> <li>✓ Sectoral growth from INR 0.02 to INR 74.76 crores (5 year) &amp; 783 crores (15 years)</li> <li>✓ 1-2 MAP farmer-producer cluster per district (<b>28 clusters</b>)</li> <li>✓ <b>5000 kanals</b> land under cultivation of MAPs</li> </ul>	<ul style="list-style-type: none"> <li>✓ Strengthening of agricultural economy</li> <li>✓ Reduced stress on forests</li> <li>✓ Reduced value chain losses</li> <li>✓ Trained manpower &amp; skilled youth (3000)</li> <li>✓ Quality Products, Patents &amp; Designs</li> </ul>	Current Contribution	Expected Growth Target	% CAGR	0.02	783	56
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S. No.	Project Title	Intervention	Output	Outcome			
18	Roadmap for Poultry Development in J&K	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• Huge deficit 50% in poultry meat, 80% egg</li> <li>• Local production relying on import of critical inputs</li> <li>• UT has above average poultry consumption - flight of capital of 1273 crores /year</li> </ul> <table border="0"> <tr> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>➤ Broiler day-old chick production</li> <li>➤ Commercial feed manufacturing</li> <li>➤ Egg production through commercial and backyard/free-range farms</li> </ul> </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>✓ 35 feed manufacturing units established</li> <li>✓ 125 breeder farm cum hatcheries created</li> <li>✓ 200 layer farms of 10000 capacity in commercial sector established</li> <li>✓ 1 crore birds under backyard &amp; horti-poultry systems</li> <li>✓ 60 crore eggs &amp; 6500 MT of free-range meat</li> </ul> </td> <td style="vertical-align: top;"> <ul style="list-style-type: none"> <li>✓ Reduced import of inputs</li> <li>✓ Increased profit margins</li> <li>✓ Cheaper poultry &amp; poultry products</li> <li>✓ Will pave way for integrators and promote contract based farming</li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>➤ Broiler day-old chick production</li> <li>➤ Commercial feed manufacturing</li> <li>➤ Egg production through commercial and backyard/free-range farms</li> </ul>	<ul style="list-style-type: none"> <li>✓ 35 feed manufacturing units established</li> <li>✓ 125 breeder farm cum hatcheries created</li> <li>✓ 200 layer farms of 10000 capacity in commercial sector established</li> <li>✓ 1 crore birds under backyard &amp; horti-poultry systems</li> <li>✓ 60 crore eggs &amp; 6500 MT of free-range meat</li> </ul>	<ul style="list-style-type: none"> <li>✓ Reduced import of inputs</li> <li>✓ Increased profit margins</li> <li>✓ Cheaper poultry &amp; poultry products</li> <li>✓ Will pave way for integrators and promote contract based farming</li> </ul>		
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		<p style="text-align: center;"><b>Figure 23: Developmental Road Map by Investing 248 Crores (Poultry Development)</b></p> <p><b>Expected Outcomes :</b></p> <ol style="list-style-type: none"> <li>1. Addition of 1273 INR crores to SGDP</li> <li>2. Generation of 420 additional enterprises</li> <li>3. Generation of 4250 additional jobs</li> <li>4. Reduced import of inputs, increase profit margins, cheaper poultry &amp; poultry products, better breeds</li> </ol>																							
S. No.	Project Title	Intervention	Output	Outcome																					
19	Strengthening Agri-Marketing in UT of J&K	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>• Terms of trade not in favour of farmers</li> <li>• Uncertain &amp; instable markets</li> <li>• Poor logistic market infrastructure</li> </ul> <table border="1"> <tr> <td>➤ Market reforms</td><td>✓ 11 CA Stores (65000 MT)</td><td>✓ Minimized value losses up to 70%</td></tr> <tr> <td>➤ Infrastructure development</td><td>✓ 12 Hi-Tech Grading Lines</td><td>✓ Transfer of real remunerative prices to farmer</td></tr> <tr> <td>➤ Institutional building &amp; capacity development</td><td>✓ 25 mini cold stores</td><td>✓ Reduced food wastage</td></tr> <tr> <td></td><td>✓ 4 New Mandies (Samba, Reasi, Kishtwar &amp; Bandipora)</td><td>✓ An efficient decision support system</td></tr> <tr> <td></td><td>✓ 400 Rural Business &amp; Service Hubs</td><td>✓ Increase in farmers income by 15-20%</td></tr> <tr> <td></td><td>✓ 2 Agri Branding Centres</td><td></td></tr> <tr> <td></td><td>✓ One Market Intelligence Cell</td><td></td></tr> </table>	➤ Market reforms	✓ 11 CA Stores (65000 MT)	✓ Minimized value losses up to 70%	➤ Infrastructure development	✓ 12 Hi-Tech Grading Lines	✓ Transfer of real remunerative prices to farmer	➤ Institutional building & capacity development	✓ 25 mini cold stores	✓ Reduced food wastage		✓ 4 New Mandies (Samba, Reasi, Kishtwar & Bandipora)	✓ An efficient decision support system		✓ 400 Rural Business & Service Hubs	✓ Increase in farmers income by 15-20%		✓ 2 Agri Branding Centres			✓ One Market Intelligence Cell			
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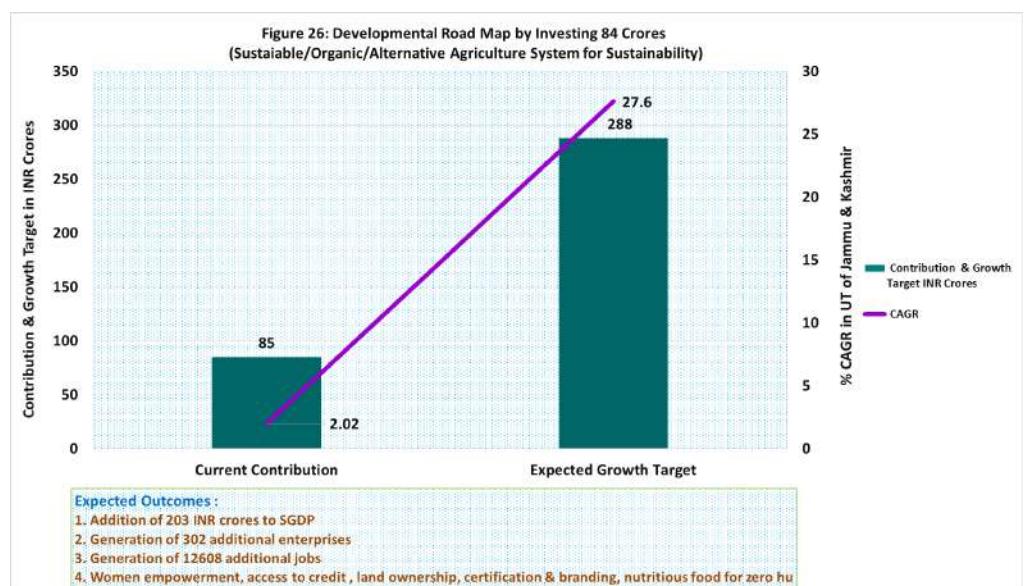


S. No.	Project Title	Intervention	Output	Outcome
20	Technological interventions to strengthen sericulture in UT of J&K	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• Shortage of quality mulberry leaves</li> <li>• Low cocoon yield as compared with National Averages</li> <li>• Inadequate rearing space &amp; knowledge with farmers</li> <li>• Deficient Seed Production &amp; deficient processing (&lt;30%)</li> <li>• Low Quality of Raw Silk Produced</li> </ul> <ul style="list-style-type: none"> <li>➤ Expansion of area under mulberry</li> <li>➤ Enhancing the capacity of silkworm seed production</li> <li>➤ Well-equipped and well managed chawki rearing centres (CRCs)</li> <li>➤ Establishment of automatic reeling machine</li> </ul>	<ul style="list-style-type: none"> <li>✓ 10 Lakh new mulberry plants</li> <li>✓ 2 times more silkworm seed production (8 lac to 16 lacs DF laying)</li> <li>✓ 100 new CRCs for supply of chawki worms to farmers.</li> <li>✓ Increase in cocoon production</li> </ul>	<ul style="list-style-type: none"> <li>✓ Regaining of J&amp;K's glory as a producer of high quality silk</li> <li>✓ Abundant &amp; quality mulberry leaves</li> <li>✓ Supplementary jobs</li> <li>✓ Instant market for cocoons, International Grade Raw Silk Production in UT</li> </ul>

		for market linkage	from 700 MT to 1350 MT ✓ One new ARM at Jammu serving a cluster of 2000 farmers	✓ Human Resource Development - for 15000 farmers										
<p style="text-align: center;"><b>Figure 25: Developmental Road Map by Investing 89 Crores (Promotion of Sericulture)</b></p> <table border="1"> <thead> <tr> <th>Category</th> <th>Value</th> </tr> </thead> <tbody> <tr> <td>Current Contribution</td> <td>85</td> </tr> <tr> <td>Expected Growth Target</td> <td>173</td> </tr> <tr> <td>CAGR (Left Axis)</td> <td>-0.5</td> </tr> <tr> <td>CAGR (Right Axis)</td> <td>13.9</td> </tr> </tbody> </table> <p><b>Expected Outcomes:</b></p> <ol style="list-style-type: none"> <li>1. Addition of 88 INR crores to SGDP</li> <li>2. Generation of 1 additional enterprises</li> <li>3. Generation of 7050 additional jobs</li> <li>4. Quality silk &amp; Human Resource Development for 15000 farmers</li> </ol>					Category	Value	Current Contribution	85	Expected Growth Target	173	CAGR (Left Axis)	-0.5	CAGR (Right Axis)	13.9
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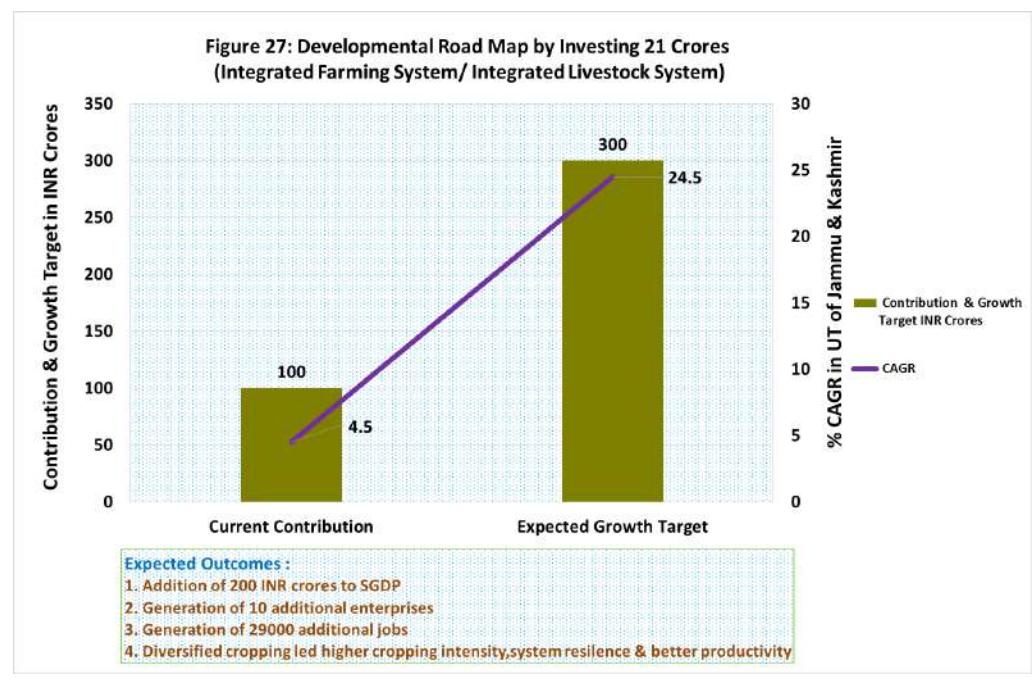
S. No.	Project Title	Intervention	Output	Outcome
21	Promotion of Sustainable / Organic/ Alternative Agriculture	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>• Growing demand for organic produce in a health conscious society</li> <li>• Remote pockets using traditional cultivation methods can easily be converted</li> <li>• Sustainable &amp; safe agriculture, environment and food production</li> <li>• Lack of knowledge and poor certification know how</li> </ul> <p>➤ Area expansion in cluster approach under organic cultivation &amp; default areas</p> <p>➤ Bio- input production &amp;</p>	<p>✓ 5 clusters per district (total 2000 ha)</p> <p>✓ Additional 2000 ha in default organic areas and niche corps</p>	<p>✓ Scientific manpower</p> <p>✓ Bio- Input Production</p> <p>✓ Certification and Branding</p> <p>✓ Value/ Market Chain</p>

		<ul style="list-style-type: none"> <li>➤ recycling of resources</li> <li>➤ Facilitation certification &amp; marketing</li> <li>➤ Training &amp; capacity building</li> </ul>	<ul style="list-style-type: none"> <li>✓ 10,000 farmer families trained in organic farming</li> <li>✓ 200 Comm &amp; 3000 low cost VC units (Rs 103cr/yearr)</li> <li>✓ 100 IOFS Units</li> <li>✓ 2 Bio-Input Production Units (R&amp;D)</li> <li>✓ Organic value chain increase from 92-143 %</li> </ul>	<ul style="list-style-type: none"> <li>✓ Clean &amp; sustainable environment, inputs and food</li> </ul>
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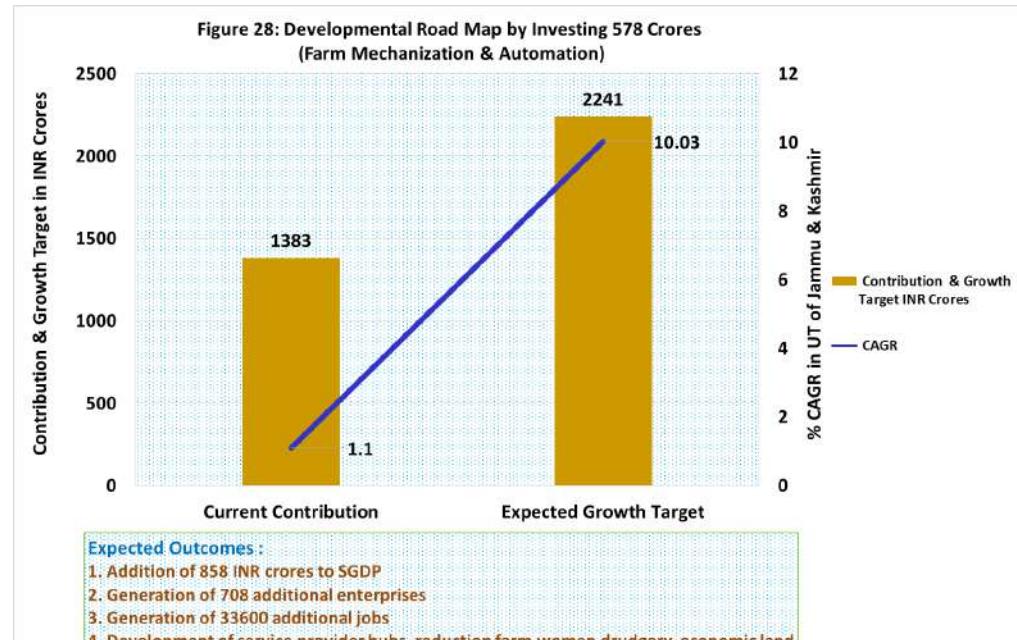
S. No.	Project Title	Intervention	Output	Outcome
22	Adoption and promotion of Integrated Farming System (IFS)/ integrated livelihood system (ILS)	<p><b>Major Rationale:</b></p> <ul style="list-style-type: none"> <li>• Small &amp; Marginal farmers unable to obtain remunerative returns from their holdings</li> <li>• Efficient use of Fragile &amp; Finite resources &amp; cushion farmers from risk of crop failure</li> <li>• Sustainable agriculture, livelihood security and mitigation of climate change</li> </ul> <p>➤ Farmer assessment &amp; human</p>	<ul style="list-style-type: none"> <li>✓ 20,000 farmers from 20 districts trained in IFS</li> </ul>	<ul style="list-style-type: none"> <li>✓ Enhanced farmer income (1:2.01 CB Ratio)</li> </ul>

in UT of J&K	<p>resources development</p> <ul style="list-style-type: none"> <li>➤ Orientation &amp; capacity building</li> <li>➤ Implementing IFS interventions</li> </ul>	<ul style="list-style-type: none"> <li>✓ 10,000 ha area under IFS interventions</li> <li>✓ 8.6 Lakh quintals vermi-compost (value 43 crores)</li> <li>✓ 1.07 crores man-days employment</li> <li>✓ Sequestration of 80,000 MT of CO2 (4.5 lakh trees)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Increased per hectare productivity (by 100%)</li> <li>✓ Minimize farmer risk owing to system resilience</li> <li>✓ Diversified farming and increased cropping intensity</li> </ul>
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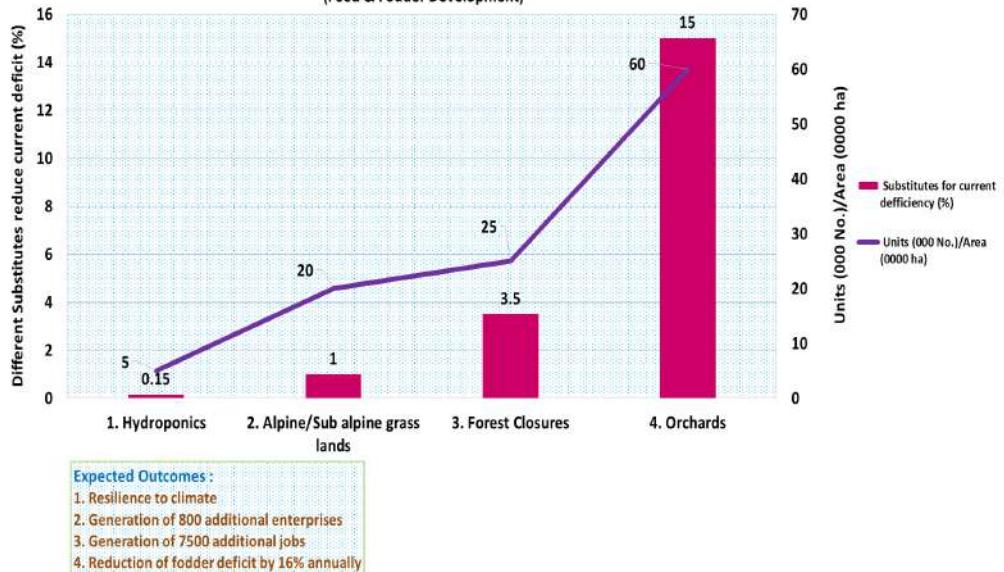
S. No.	Project Title	Intervention	Output	Outcome
23	Farm mechanization and automation	<p>Major Rationale:</p> <ul style="list-style-type: none"> <li>• J&amp;K is trailing in farm power with only 1.74Kw/ha (NA 2.5Kw/ha)</li> <li>• Will decrease cost of production by 10-15% and boost productivity by 15-20%</li> </ul>		

	<ul style="list-style-type: none"> <li>Inadequate availability of farm friendly equipment, implements &amp; hi-tech machinery</li> </ul>		
	<ul style="list-style-type: none"> <li>➤ Custom hiring centres &amp; farm machinery banks</li> <li>➤ Mechanization &amp; automation of agricultural farms</li> <li>➤ HRD</li> <li>➤ R&amp;D in design and manufacturing</li> </ul>	<ul style="list-style-type: none"> <li>✓ Farm power from present 1.74 Kw/ha to 2.5 Kw/ha</li> <li>✓ 283 Custom Hiring Centre</li> <li>✓ 142 AI &amp; precision farming centres</li> <li>✓ 15 - 20% saving in seeds and fertilizers</li> <li>✓ 5 - 25% increase in crop production &amp; crop intensity</li> </ul>	<ul style="list-style-type: none"> <li>✓ Prototype production centres</li> <li>✓ Development of region specific farm machines</li> <li>✓ Reduction in drudgery of farm workers especially women</li> <li>✓ Economize agriculture land use by 15%</li> </ul>



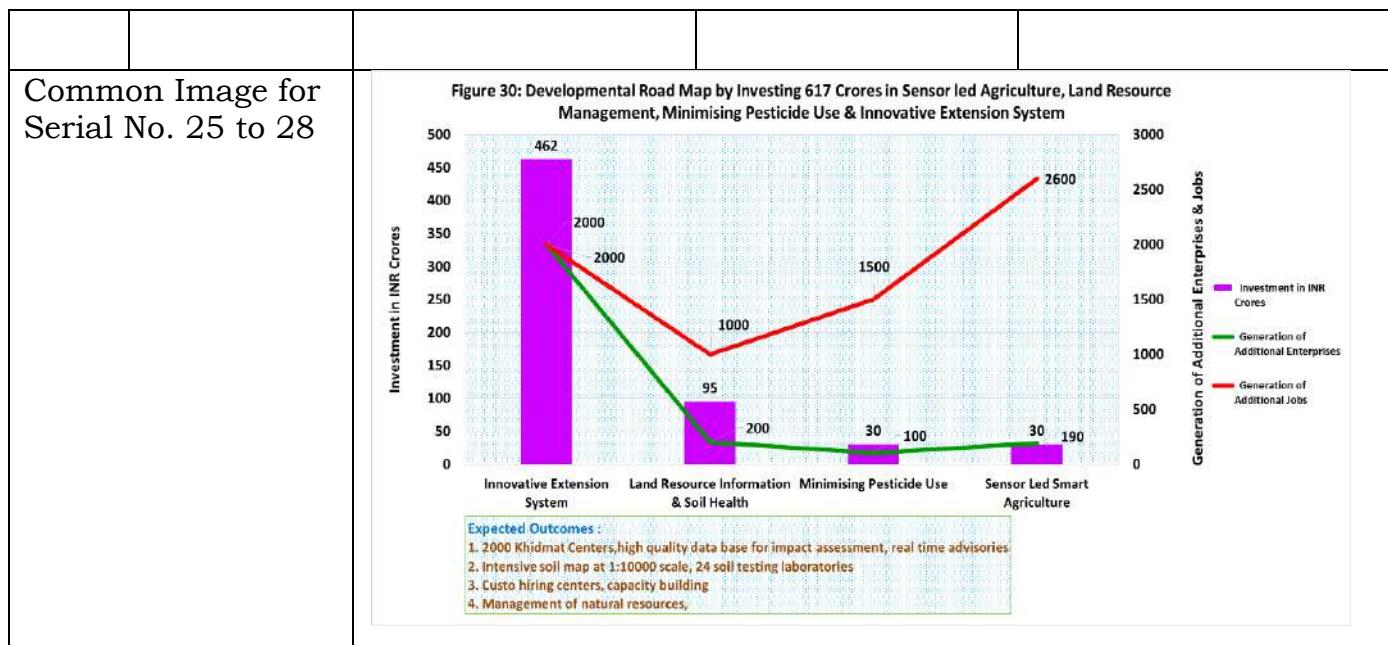
S. No.	Project Title	Intervention	Output	Outcome
24	Development of feed & fodder resources for UT of J&K	<ul style="list-style-type: none"> <li>➤ Feed &amp; fodder production, processing and value addition incentives</li> <li>➤ Innovation in green fodder production</li> <li>➤ Genetic improvement of fodder crops</li> <li>➤ Horti-siliv-pastoral systems &amp; grasslands</li> </ul>	<ul style="list-style-type: none"> <li>✓ Farmer demo plots on 4100 ha/year</li> <li>✓ 300 hay-silage units</li> <li>✓ 25 fodder depots created</li> <li>✓ 500 hydroponic units (15,000 MT green fodder output)</li> <li>✓ 15 lac MT of fodder (15% of deficit) from 60,000 ha orchards</li> <li>✓ 3.75 lac MT of fodder from forest closures (25,000 ha)</li> <li>✓ 100,000 MT of fodder from alpine/sub-alpine grasslands (20,000 ha)</li> </ul>	<ul style="list-style-type: none"> <li>✓ Promotion of improved early maturing varieties climate resilience &amp; high yield/biomass</li> <li>✓ Adoption of Hi-tech hydroponics farming models</li> <li>✓ Optimum land use at orchards</li> <li>✓ Improvement of grasslands (sub-alpine &amp; alpine)</li> <li>✓ Farmers HRD</li> <li>✓ Reduction of fodder deficit by 80%</li> </ul>

Figure 29: Developmental Road Map by Investing 129 Crores to take current -40 % deficit to -8 % deficit  
(Feed & Fodder Development)



<b>S. No.</b>	<b>Project Title</b>	<b>Intervention</b>	<b>Output</b>	<b>Outcome</b>
<b>25</b>	Sensor Based Smart Agriculture	<ul style="list-style-type: none"> <li>➤ R&amp;D for capacity building towards smart agriculture</li> <li>➤ State of art sensor based high tech protected cultivation</li> <li>➤ Sensor based pilot study on high density apple cultivation</li> <li>➤ Sensor based pilot study on protected cultivation of vegetable</li> <li>➤ IoT based monitoring of livestock</li> </ul>	<ul style="list-style-type: none"> <li>✓ R&amp;D ecosystem in sensor based operation</li> <li>✓ Skilled manpower in IOT and automation</li> <li>✓ Precise management of irrigation and fertilization for apple and other crops</li> <li>✓ Precise monitoring of disease and pests</li> <li>✓ Evaluation of effectiveness of better management strategies</li> </ul>	<ul style="list-style-type: none"> <li>✓ Reduction in nutrient and pesticide use by 50% through increased efficiency</li> <li>✓ Effective disease and pest management</li> <li>✓ Reduced cost of production</li> <li>✓ Start-ups in sensor based automation</li> </ul>
<b>26</b>	Innovative approaches in agriculture extension	<ul style="list-style-type: none"> <li>➤ Panchayat Level common service center (Kissan Khidmat Garh)</li> <li>➤ Block level Agri-Extension Advisory Committee</li> <li>➤ KVKS as convergence hub at District level</li> <li>➤ Community Radio Station</li> <li>➤ Production Studio</li> <li>➤ Capacity Building &amp; Skill Development</li> <li>➤ Agri -Business Consultancy Hub</li> <li>➤ Participatory Research in Extension</li> </ul>	<ul style="list-style-type: none"> <li>✓ 2000 Kissan Khidmat centers for Coordination and Convergence</li> <li>✓ Farmers Database and MIS portals, e-informatics, smart phone applications,</li> <li>✓ High quality agri-extension / technology documentaries</li> <li>✓ SKUAST outreach at grass root</li> <li>✓ Future ready Extension Functionaries &amp; skilled HR</li> <li>✓ Secondary agriculture and market linkage</li> <li>✓ Impact Assessment</li> </ul>	<ul style="list-style-type: none"> <li>✓ Holistic area specific agricultural plan and models</li> <li>✓ Services at farmers door steps along the value chain</li> <li>✓ Self-employment of 2000 Youth</li> <li>✓ KVKS as resource Centre for end-to-end solutions and agri-tourism model</li> <li>✓ Real-time agro-advisories and Seamless knowledge / technology transfer and Intensified outreach</li> <li>✓ Enhanced Entrepreneurship and Employment generation</li> </ul>

27	J&K soil and land resource information system	<ul style="list-style-type: none"> <li>➤ Evaluate crop – land suitability</li> <li>➤ Capturing soil profile data</li> <li>➤ Site-specific soil health assessment</li> <li>➤ Human resources development</li> </ul>	<ul style="list-style-type: none"> <li>✓ Data for 4 districts at panchayat levels</li> <li>✓ Intensive soil maps at 1:10000 scale</li> <li>✓ A web-based soil information system</li> <li>✓ 6 soil testing laboratories in each district – total 24 (4 block level &amp; 2 district level)</li> <li>✓ 200 agri-preuners trained in soil health testing – private lab development</li> </ul>	<ul style="list-style-type: none"> <li>✓ Authentic Soil and Land Resource Repository with Soil Museum</li> <li>✓ Land evaluation for crop suitability and alternate land use</li> <li>✓ Efficient use of fertilizers and micro-nutrients (INM)</li> <li>✓ Policy document on agriculture and urbanization for sustainable ecosystem</li> <li>✓ Up to 10% increase in land productivity</li> </ul>
28	Minimizing pesticide use in agriculture	<ul style="list-style-type: none"> <li>➤ Development of cluster based model orchards</li> <li>➤ Identification of disease resistant varieties</li> <li>➤ Developing, validating &amp; demonstrating decision support system</li> <li>➤ Popularizing for adoption of advanced spraying technology &amp; bio-pesticides</li> <li>➤ Estimating pre-harvest interval for developing safe food</li> </ul>	<ul style="list-style-type: none"> <li>✓ 10 Cluster model HDP orchards</li> <li>✓ 20 Custom Hiring Centre for Spraying Machines</li> <li>✓ 100 Agri-entrepreneurs for Bio-Pesticide Production</li> <li>✓ Estimation of PHI for 23 pesticides recommended in apple (pre-harvest interval)</li> <li>✓ 200 orchards in cluster &amp; 1000 orchards with Advanced Spraying Facilities</li> </ul>	<ul style="list-style-type: none"> <li>✓ Safer environment, food &amp; human health</li> <li>✓ Demonstration of 90% reduction in pesticide usage.</li> <li>✓ 20-40% reduction in input costs</li> <li>✓ Quality &amp; safe fruit production suitable for exports</li> <li>✓ Web/App based database for farmer guidance in pesticide use decision making.</li> </ul>



<b>S. No.</b>	<b>Project Title</b>	<b>Intervention</b>	<b>Output</b>	<b>Outcome</b>
<b>29</b>	Support to HRD in 2 Farm Universities as Technological backstop for Sustainable Accelerated Transformation of Agriculture	<ul style="list-style-type: none"> <li>• Scholarships for PG Students</li> <li>• VC Flexi Grant</li> </ul>	<p>Rs 5000 per student per month</p> <p>Stimulation of innovation in university</p>	<p><b>Next Gen Leaders</b> in agriculture who shall drive the knowledge based and tech-driven in agriculture towards making JK as Model Bio-economy State</p> <p>An Idea bank of innovations</p> <p>Patents and Commercialized Technologies</p>

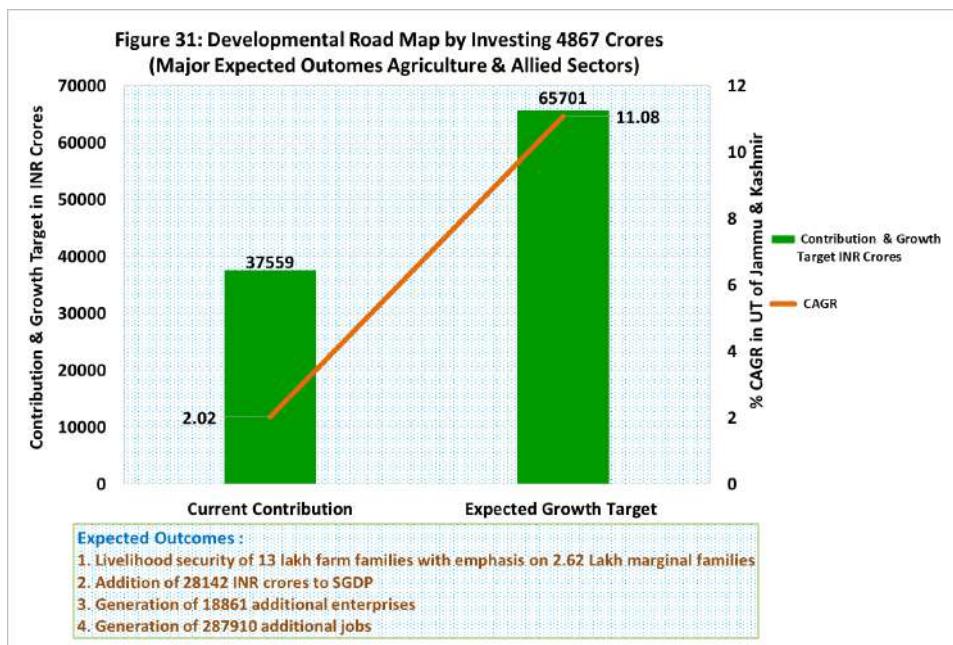
**Expected Output of the projects:**

- a. The gross agricultural output which is to the tune of ₹ 37559 Cr. per year will grow to ₹ 65701 Cr. per year over next 5 years.
- b. The CAGR of Agriculture & Allied Sectors at the end of the project period shall grow to 11.08% from the current 2.02%.
- c. The livelihood of 13 lakh farm families shall be secured with particular emphasis on 2.62 lakh marginal families.
- d. ₹ 28142 Cr shall be added to the SGDP of J&K annually.
- e. 18861 new business enterprises shall be created.
- f. Additional jobs to the tune of 2,87,910 shall be created in the Agriculture & Allied Sectors.

**Expected Outcomes of the projects:**

- 1) Recommended Seed Replacement Rate of 33% will be achieved by production of 2.596 lakh MT of quality seed.
- 2) Boost in production by adding 11000 Ha under Niche crop cultivation along with GI Tagging.
- 3) Self-reliance in Vegetables, exotic varieties for export by increasing production from 19.90 lakh to 25.87 lakh MT.
- 4) 67,000 MT of CA Storage Space shall be created with full value chain and aggregation network
- 5) A new dawn in Medicinal & Aromatic plant cultivation – potential growth of 750 crores shall be achieved.
- 6) Tripling of Honey Production, Value added by-products besides 10 to 15% increase in crop productivity due to increased insect pollinators.
- 7) Doubling of silkworm seed and cocoon production and regaining of J&K's glory as a producer of high-quality silk with increase in cocoon production from 700 MT to 1350 MT.
- 8) Doubling production of Oil seeds, area under cultivation will increase from 1.4 lakh Ha to 2.1 lakh Ha.
- 9) Creation of 300 FPOs. Net returns to the farmers will increase by 10-12%.
- 10) IF Systems, IOF Systems & IL System involving 85,000 farmer families. Enhanced farmer income (1:2.01 CB Ratio), Increased per hectare productivity (by 100%)
- 11) Soil and Land Use Database for efficient prospective planning to reduce input cost and increase productivity.
- 12) 14,000 ha of drought prone land under Millet & Nutri-cereals
- 13) 50% increase in Apple Economy from 10,000 crore/year to 15,000 crore /year
- 14) Cluster Development and processing of major crops with a net revenue of over 1450 crore/year
- 15) Milk output will increase by 75% and milk entering processing chain will be tripled.
- 16) Self-reliance in mutton with VA wool & pelt chains
- 17) Saving a capital flight of 1273 Crore/year in poultry meat & eggs

- 18) Doubling of Trout & Carp Production
- 19) Fodder Deficit Reduction by 80%
- 20) Demonstration of Innovation futuristic hi-tech agriculture
- 21) 2000 Kisan Khidmat Centres for handholding and clusterization.



### Budgetary Requirement over next 5 years.

- a) ₹ 3585.00 Cr. Budgetary support is required under UT capex
- b) ₹ 1428.00 Cr. will be projected under Centrally Sponsored Schemes.

### Project Guidelines

Guidelines of the project proposals are appended with the respective DPRs, however for convenience the guidelines of all the project proposals are placed at annexure to this document.

## 7. Implementation Framework

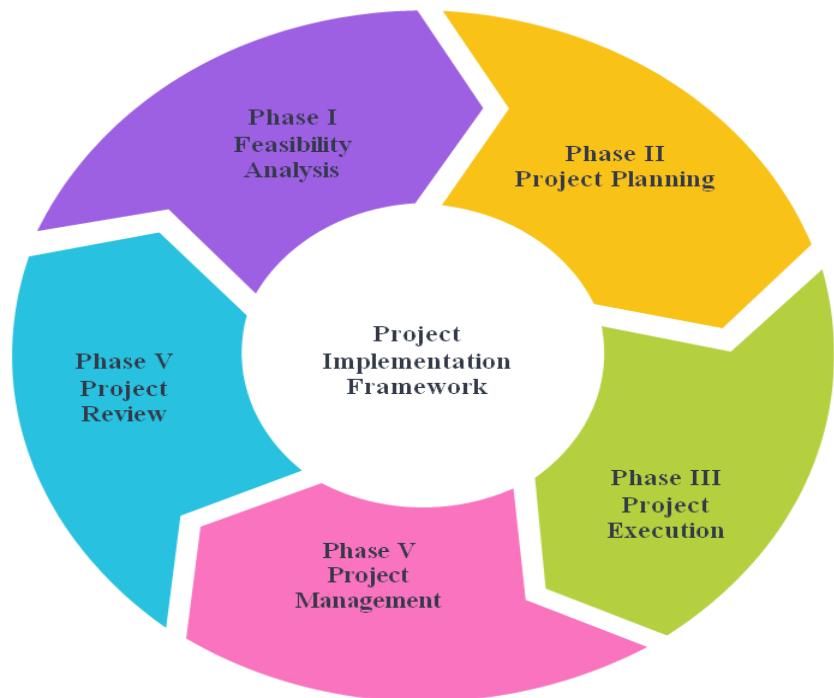
The Department of Agriculture Production Department (APD), Government of J&K is implementing the diverse projects for holistic agricultural development for transformation of bio-economy for the next 5 years. In view of the present and future needs, agriculture sector under the renewed policy has been revised and realigned for the next 5 years during 2023-2028. The Holistic Development Projects for J&K UT agriculture aims towards employment generation, entrepreneurship development, increase in productivity and thus targeting increased production of horticulture, agriculture, livestock and fisheries under the umbrella Development Programme. The excess production will help in the export earnings after meeting the domestic demands. The

concept of holistic agriculture development is to develop the entrepreneur in order to create the forward and backward linkage for the produce available at the unorganized sector and to link with the organized sector.

This framework helps organizations map out the progression of the individual project steps, from beginning to completion. The framework includes all aspects of the project, from required resources and tools to specific processes and tasks. Project implementation framework with a set of activity indicators were built up after improving upon previous frameworks. While this framework was designed with general project management after incorporating items from various specific purpose frameworks. The project implementation framework is comprised of five following Phases each with a timeline and milestones to accomplish as:

- ❖ **Phase 1: Feasibility Analysis.** This is the beginning stage of the project. Initiation activities include brainstorming, research, and feasibility analysis and stakeholder interviews prior to the project execution/planning. It is also called Ex Ante Evaluation stage. The focus of this phase should be to identify and assess the project requirement.
- ❖ **Phase II: Project Planning.** Planning of the projects should determine who specifically will be involved in the projects, which teams, and plan out progress milestones and success benchmarks. Risk analysis and management shall be addressed in detail.
- ❖ **Phase III: Project Execution.** This stage consists of the actual production of deliverables, and the specific action items required from each of the sub-project to drive progress for the project.
- ❖ **Phase IV: Project Management.** This stage focuses on documentation, monitoring and reporting project progress at each milestone. Key takeaways should be shared with stakeholders.
- ❖ **Phase V: Project Review.** This occurs at the end of the project. Here, project leaders and team members involved will look back and analyze what went well in the project in light of set monitorable indicators. This stage helps to improve upon project activity reforms at the commencement of year and could be captioned as Ex Poste Analysis stage.

Project implementation plan envisions how agriculture projects for the UT of J&K will be executed. It details the stages and the strategic goals and steps involved in a project, define the project completion timeline, and list the resources (including team members) necessary for a successful project. Accordingly, following Project implementation framework is provided:



## **Implementation framework for Management of Agricultural Projects in J&K**

### **Indicators of project implementation framework**

#### **Phase I: Project Feasibility Assessment (Ex ante Analysis)**

Phase	Key indicator
<b>FEASIBILITY ANALYSIS (Ex Ante Analysis)</b>	<ol style="list-style-type: none"> <li>1. Assessment including <ul style="list-style-type: none"> <li>• Economic Assessment (capital requirement, equity, etc)</li> <li>• Technological Assessment (Technology, machines, etc)</li> <li>• Organizational Assessment (Team, leadership, etc)</li> </ul> </li> <li>2. Fit Assessment <ul style="list-style-type: none"> <li>• Agro-ecology specific intervention</li> <li>• Risk assessment</li> </ul> </li> <li>3. Capacity assessment <ul style="list-style-type: none"> <li>• Training needed</li> <li>• Competence building</li> <li>• Pre-project Execution Training</li> <li>• Technical knowhow needs</li> </ul> </li> <li>4. Decisions on flexibility <ul style="list-style-type: none"> <li>• Flexibility of decision and activities</li> <li>• Flexibility in cluster &amp; collectivization</li> <li>• Flexibility in community involvement</li> <li>• Assessment of barrier to intervention</li> <li>• Involvement of progressive/key farmer</li> </ul> </li> </ol>

	<ul style="list-style-type: none"> <li>• Leadership traits among farmers</li> </ul> <p>5. Human resource</p> <ul style="list-style-type: none"> <li>• Skill specific labour needs</li> <li>• Staff requirement</li> <li>• Deployment of existing staff, etc</li> </ul>
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### Phase II: Project Planning

Phase	Key indicator
<b>PROJECT PLANNING</b>	<ol style="list-style-type: none"> <li>1. Milestone with timeline <ul style="list-style-type: none"> <li>• Accountability, milestones with timeline</li> <li>• Possible challenges to each milestone</li> <li>• Scheduling of milestones</li> </ul> </li> <li>2. Identification of Human resources and division of labour</li> <li>3. Allocation of funds</li> </ol>

### Phase III: Project Execution

Phases	Key indicator
<b>PROJECT EXECUTION</b>	<ol style="list-style-type: none"> <li>1. Deployment of HR for projects</li> <li>2. Technical training</li> <li>3. Allocation of funds</li> <li>4. Procurement of machines</li> <li>5. FPOs formation and clustering</li> <li>6. Creation of logistics</li> <li>7. Tie-up with industries / private player</li> <li>8. Implementation of project activities</li> </ol>

### Phase IV: Project Management

Phases	Key indicator
<b>PROJECT MANAGEMENT</b>	<ol style="list-style-type: none"> <li>1. Supervising the progress in line with Monitorable Indicator</li> <li>2. Project Risk management during process</li> <li>3. Risk aversion activities</li> <li>4. Accounting and data management</li> <li>5. Execution of work plans</li> </ol>

### Phase V: Project Review

Phases	Key indicator
<b>PROJECT REVIEW (Ex Poste Analysis)</b>	<ol style="list-style-type: none"> <li>1. Performance Evaluation</li> <li>2. Economic assessment of projects and review</li> <li>3. Annual reporting and visualization</li> </ol>

A number of Committees would be constituted with delegation of responsibilities for the effective management of agricultural project in the J&K UT.

## **7.2. MONITORING AND EVALUATION SYSTEM (The project control system)**

Monitoring and Evaluation involves the active monitoring and management of the project activities. This activity is mandated to manage and mitigate risks, track progress across committees/groups and members, and communicate project outputs with various stakeholders. There is a need to ensure smooth communication across different groups to observe the actual progress in comparison to the timeline or any deviation from the original plan and analyse the implications. This stage is crucial to bring in corrective measures to steer the project activities in the right direction. Monitorable indicators and a system for their access and required Tools & templates are to be developed to offer a readily available structure to evaluation of the projects.

**Key Components/Activities of M&E-** The Mission would institute a comprehensive M&E system comprising the following components:

### **a. MIS Based Input-Output Monitoring Purpose**

The central purpose of the web-enabled MIS based input-output monitoring is to track the performance of the Project, using mainly quantitative information (monitorable indicators). The MIS input-output monitoring system would be designed to track information in a dynamic mode on:

- a) *Delivery of project inputs for different components to different geographic units* – institution and human capacity building, livelihood support, innovation and partnership fund etc.
- b) *Progress in monitorable indicators including gain in yield levels, growth, production/productivity), support structures created; Training and capacity building provided; etc*
- c) *M&E Taskforce-* The important first step is to create an PMU, ICT unit, which would include MIS, IT and M&E experts drawn from NIC, APD and other relevant agencies, which may be outsourced as well. The task force would also include consultants and advisors to guide the institutions.

### **b. Process Monitoring**

The outcomes of the project depend mainly on the strength and integration of the processes adopted in implementation of key activities. Process monitoring is expected to provide information to the project management and other stakeholders to understand how and through what process inputs get converted into outputs, what issues are critical in that conversion process and what action is necessary to increase effectiveness. It helps to identify critical issues to such conversion for increasing effectiveness and inclusiveness, etc. Further it could:

- i. Examine sensitivity of the project staff to the needs of the people;
- ii. Identification, financing and implementation of activities;
- iii. Convergence efforts made and succeeded etc.
- iv. verify the process related assumptions of the project;
- v. assess whether activities are carried out as planned;
- vi. generate a learning and feedback mechanism, which would enhance prospects for adaptation especially at the early stages of the project

**Key Elements of Process Monitoring-** is continuous observation process which accounts for stakeholder's perceptions, interactions between communities, SWOT of agricultural system and identify/address issues in a participatory approach.

#### **Advantages of Process Monitoring-**

- Facilitates innovative & responsive management to stakeholders
- Provides for verification of assumptions;
- Identifies good practices worth replicating;
- Bring flexibility to fine-tuning the strategies and its involving institutions;
- Improves Mission effectiveness, sustainability and monitoring skill;
- Links the project to the community needs and demands.

#### **Guiding Principles of Process Monitoring**

1. Processes must be observed at all levels & stages of project and at different points of time;
2. Different persons at different locations must adopt the same observation methodology; and
3. Observations must be made for useful decision-making.

#### **Specific activities required:**

##### **a) Technical Support Agency**

APD would utilize the services of a technical support agency to provide necessary methodological support to the review process monitoring. The agency would develop a process monitoring manual for the guidance of EIAs. The manual would contain detailed methodology, key ex ante process areas, indicators and reporting templates and undertake field testing. The agency would also identify relevant themes for process monitoring for each round and determine reporting templates. The agency would also facilitate dissemination of key process monitoring findings during the first few rounds. As part of the methodology, the agency would also develop a rating system that would allow inter-district comparison across districts by the agency.

##### **b) Process Monitoring Agencies**

The APD would utilize services/empanel process monitoring agencies, the services of which would be contracted for undertaking actual process monitoring,

following the guidelines, methodology and protocol developed by the technical support agency. Following the methodology suggested by the technical support agency, the APD would undertake process monitoring and shares the key findings with the Mission Director at block, district and UT level as per the agreed protocol. Ideally, the findings are disseminated in specially conducted meetings of the project staff at different levels. Such meetings should also include community representatives. At the end of each round of process monitoring, the Mission would agree to undertake certain actions, the progress on which would be monitored by the process monitoring teams in the subsequent rounds.

**c. Internal Reviews and Learning**

Regular conduct of internal reviews by Mission Director and EIAs would facilitate resolution of several project related problems. The internal reviews shall ideally be held at least once in 3 months on the basis of a pre-determined agenda. The monthly progress report generated through the MIS, the findings of the process monitoring could be discussed as part of internal reviews.

**d. Impact Evaluation**

The objective of impact evaluation is to establish the “net” contribution of the project to the GVA & livelihoods of the UT. Measuring the impact would then involve comparing the GVA & livelihood situation “before” and “after” the project and between the project and control areas.

**e. Longitudinal Study**

In addition to the standard impact evaluation format, the project would also commission a longitudinal study of a select subset of a cross-section of UT using a panel system of sampling. The empaneled beneficiaries from the baseline sample would be revisited at yearly/ biannual frequency to track the full range of changes taking place in the increase in output, remuneration, employment, GVA, Cooperatives, enterprises etc.

**f. Stand-alone studies/ thematic studies**

A few stand-alone studies/ thematic studies would also be commissioned as part of the evaluation component to assess the impact of specific innovations and interventions that transcend such as promotion of organic cultivation, Niche crops, Dairy processing etc. Finally, small subsamples of communities would be tracked for in-depth qualitative data collection and analysis with frequent revisits by trained qualitative field investigators.

**g. Social/Development Audit**

In addition to the external evaluation and stand-alone studies, the APD would make efforts to institute social/ development audit systems to assess community perceptions on the impact of the projects. Methods like users' satisfaction rating, beneficiary/citizen report card and community scorecards would be introduced after the first year of the project. Ideally, these methods are used on an annual basis. However, during the last phase of the project, assessments can be sought from the community at half yearly frequency. However, the services of an external agency would be required to design the social/development audit systems and mainstream them.

Development audit is conceived as a series of steps that would culminate in a scored assessment of project effectiveness in a broader social and economic context. Since the development audit is a relatively new tool, the services of an external agency/consultant would be contracted by the APD to prepare the guidelines indicating scope of audit, key groups identified, stakeholder objectives, expectations and priorities from J&K Govt, measurable indicators and methods to generate information and specific targets or benchmarked against which to measure change and conduct sample development audit in two or three locations. The sample audit would also undertake compilation of effectiveness scores, assess results for different stakeholders on different development parameters and develop a format for analyzing and communicating audit results.

#### **h. External Audit**

The annual statutory audit will be conducted by the Comptroller and Auditor General (C&AG) of India as per standard terms of reference & shall be open to inspection wherever and whenever required by the Sanctioning Authority and audit, both the Internal Audit of the concerned Principal Accounts Officer, Government of India or the Finance Department, J&K.

#### **Measurable monitorable indicators**

<b>Indicators</b>	<b>Unit</b>	<b>Present (2022- 23)</b>	<b>After Project Implementation (2027-28)</b>
<b>ECOLOGY</b>			
Herbal Production (M/A)	MT		
Millet production	MT		
Buckwheat production	MT		
No. of apiaries	000 No.		

Area under managed pollination	000 ha		
Resource use efficiency	%		
Area under Organic farming	000 ha		
Soil Health Management Coverage	000 ha		
Organic input enterprises	No.		
Organic input manufacturing volume	MT/Litres		
Agroforestry in rainfed areas	ha		
Water conservation			
Soil conservation			
Pesticide use	Kgs/ha		
Others (specify)			
<b>ECONOMY</b>			
GDP (Agriculture & Allied)	\$ billion		
Growth Rate (CAGR)	%		
Seed Replacement Rate	%		
Grain Productivity	%		
Food grain production	Lac tons		
Area expansion (Fruits)	Lac ha		
Fruit production	Lac tons		
Plant material/year	Lacs		
Decrease in plant imports	%		
Fodder production deficit	(%)		
Fish Production (Trout)	Lac MT		
Mutton Production	Lac Kgs		
Milk Production	Lac Litres		
Wool Production	Lac Kgs		
Wool Processing	%		
Herbal Production (M/A)	MT		
Millet production	MT		
Buckwheat production	MT		
Vegetable production	Lac MT		

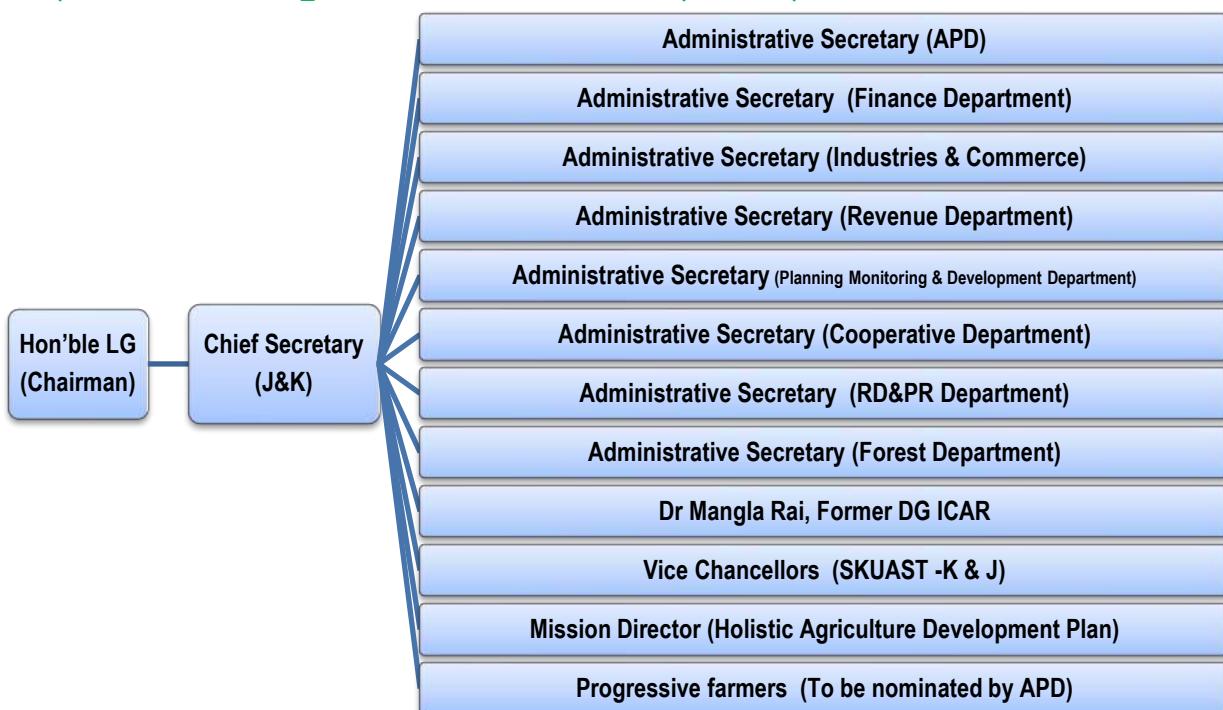
Poultry Production	MT		
Eggs	Lac. No		
Silk production	MT		
Honey Production	MT		
Mushroom production	MT		
Saffron Production	MT		
Kalazeera Production	MT		
Vegetable seed production	Kgs		
Protected Cultivation Coverage	ha		
Millet Production	MT		
Fruit Production	Lac MT		
Vegetable Production	Lac MT		
Mechanization	Kw/ha		
Automation			
Value addition	%		
Wool processing	%		
Value chain facilities	No.		
Commercial Floriculture (Cut & loose flower produce)	MT		
Others (specify)			
<b>EQUITY</b>			
Direct beneficiaries	000s		
Indirect beneficiaries	000s		
FPOs	No.		
New Enterprises created	No.		
New Institutions	No.		
Jobs created	No.		
Capacity building Trainings	No.		
Skill Development of youth	No.		
Employment	No.		
Women entrepreneurs established	No.		
Fringe community benefited from project	No.		

Double the income of fringe community	No.		
Entrepreneurs created from fringe community	No.		
Enterprises created by fringe community	No.		
Ratio of employment to fringe community	%		
Ratio of capacity building to fringe community	%		
Ratio of beneficiary share to fringe community	%		
Others (specify)			

## 7.3 Institutional structure for project implementation & monitoring

The final outcome of the project at the end of five-year period would depend more on efficiency and effectiveness of implementation notwithstanding the comprehensiveness of policy. This calls for putting in place a system of review and monitoring for efficient and effective implementation of these projects. The Holistic agriculture Development in UT of J&K will be implemented through the Agriculture Production Department (APD) established under the Agriculture Production & Farmers Welfare Department Jammu & Kashmir. In this context the following systems and structures would be adopted

### a) Central Apex Committee (CAC)



#### Roles and Responsibilities of CAC

- i. Mentorship, extension of Vision, Directions and setting Priorities.
- ii. Extension of strategic support for program implementation.
- iii. Overall monitoring the progress of the “Holistic Agriculture Development Plan”.
- iv. Approve the projects along with operational guidelines based on sectoral needs.
- v. Approve necessary changes like deletion, addition and modification of any project with regard to the plan.
- vi. Policy guidance & direction.

## b) Empowered Committee (EC)



### Roles and Responsibilities of Empowered Committee (EC)

- i. Approve re-appropriation of funds and necessary revisions to subcomponents/activities during the course of implementation of “Holistic Agriculture Development Plan” based on field situations, requirements and feedbacks from EIAs so as to remove difficulties in implementation of “Holistic Agriculture Development Plan”
- ii. Approve revision of physical targets and financial allocations of the subcomponents/activities including revision of the year-wise physical targets of individual sub-components/activities within the overall financial allocations based on the sectoral demands, local priorities and pace of fund off-take.
- iii. Approve need-based changes to the sub-components/activities within the broad framework of the scheme based on the sectoral priorities, requirements and feedbacks from EIAs, fund off take, local needs, etc. so as to remove difficulties in implementation and for optimal outcomes.
- iv. Approve Annual Action Plan indicating physical and financial targets including anticipated outcomes of the year under the “Holistic Agriculture Development Plan” based on the progress of preceding year(s), pipeline proposals (in hand), annual budgetary allocation, and financial liability of previous years, demands and needs of the sector, inputs/preparedness of EIAs etc.

- v. The EC taking into consideration the sectoral needs and demands, will be competent to approve inclusion of activities/components/effective technologies, and exclude unviable activities/components/technologies.
- vi. The EC on the recommendations of UT Level Executive Committee (ULEC) will earmark the extent of funds under administrative expenses that would be released to End Implementing Agencies.
- vii. The Chairperson of the EC may co-opt domain expert(s) as members of EC.
- viii. The Committee will also have the power to update the cost norms of different activities as required from time to time due to variation of the price index of different commodities related to a particular activity.

### **c) UT Level Executive Committee (ULEC)**

UT Level Executive Committee (UTEC) will be established under the Chairmanship of Administrative Secretary, Agriculture Production Department. The convenor of the EC will be the Mission Director. The other members of the Committee will be the Vice Chancellors & the Directors of line Departments. There would also be a core committee primarily responsible for implementation of the projects, their execution, monitoring, evaluation & impact assessment etc. This core group shall be staffed with professionally competent and dedicated human resources from the existing human resource base of J&K.

## Administrative Secretary, APD (Chairman)

### Core Committee

- Mission Director  
**(Holistic Agriculture Development Plan)**
- Project Head, Agriculture
- Project Head, Horticulture
- Project Head, Livestock
- Project Head, Marketing & Value Addition
- Project Head, R&D

### End Implementing Agencies (EIAs)

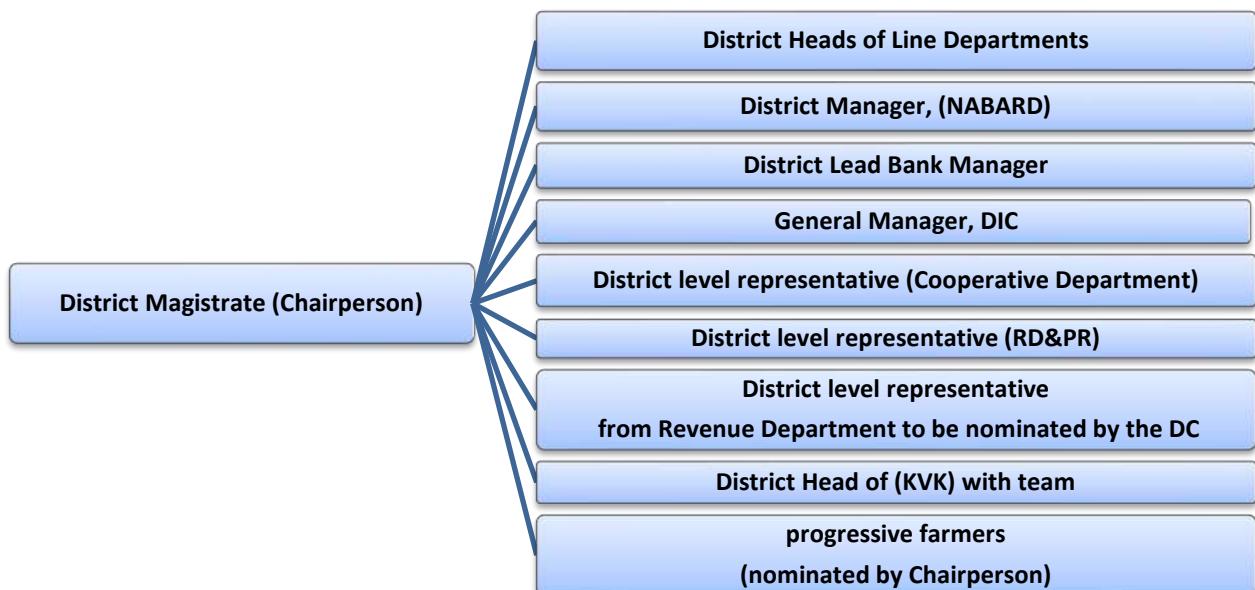
- Vice Chancellors (SKUAST-K & J) along with faculty members
- Director Agriculture (J&K)
- Director Horticulture (J&K)
- Director Animal Husbandry Director Sheep Husbandry (J&K)
- Director Sericulture (J&K)
- Director Horticulture Planning & Marketing (J&K)
- Director Fisheries (J&K)
- CGM, NABARD
- Convenor, UTLBC

### **Role of UT Level Executive Committee**

- i. VC SKUAST Jammu/Kashmir shall co-opt faculty members as per demand & requirements
- ii. The UT Level Executive Committee shall be responsible for implementing and monitoring the projects and furnish their progress on quarterly basis.
- iii. The ULEC will also monitor the implementation of project(s) at the ground level.
- iv. The ULEC shall be empowered to suggest changes in guidelines which will be approved by the Empowered Committee.
- v. Handhold in implementing & executing the projects on ground.
- vi. Make recommendations to the EC from time to time for continuous improvement of implementation of the “Holistic Agriculture Development Plan”
- vii. handhold beneficiary to facilitate them to submit the proposal
- viii. Undertake outreach of the scheme
- ix. maintain liaison with the respective banks for monitoring the fund flow to the beneficiary

- x. The ULEC would be assisted by such committees/bodies as may be constituted by the Department for smooth execution of its roles and responsibilities.

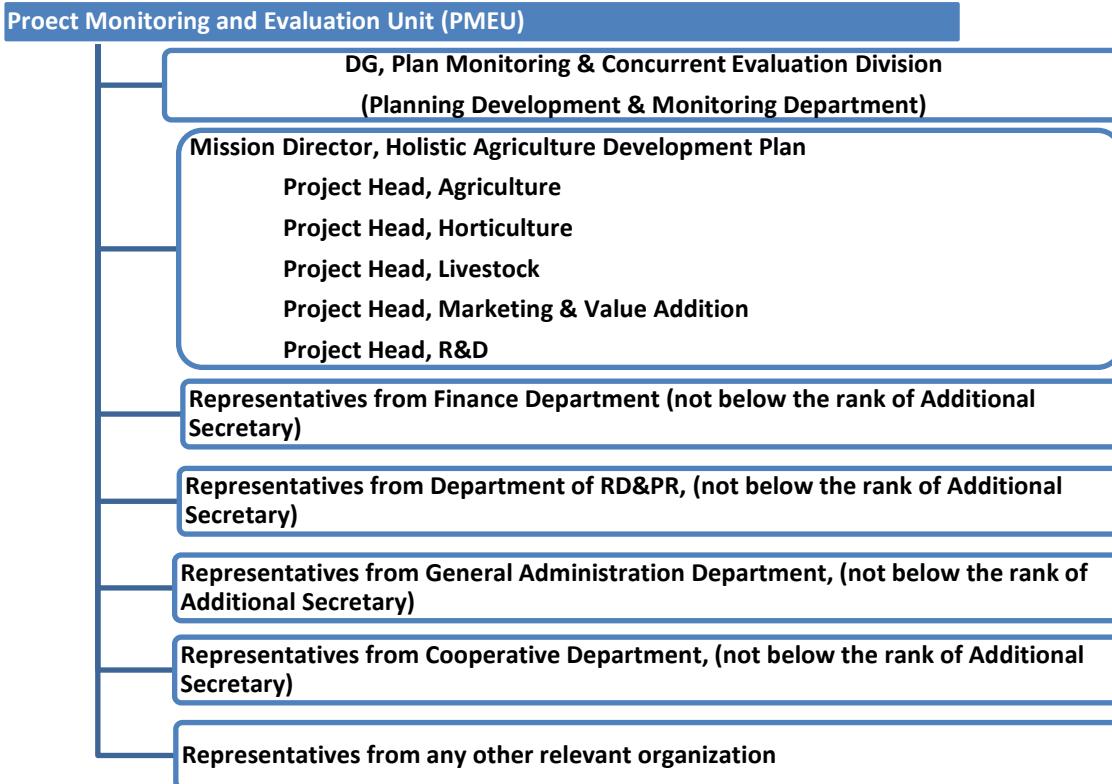
## **d) District-level Committees (DLC)**



### **Responsibilities of DLC**

- i. The DLC will be responsible for implementation of the “Holistic Agriculture Development Plan” at the District Level including its supervision and monitoring.
- ii. The DLC will be responsible for approval of beneficiaries for Beneficiaries oriented individual/group activities of “Holistic Agriculture Development Plan”.
- iii. The DLC will undertake convergence of activities under “Holistic Agriculture Development Plan” with activities/interventions other Schemes and programs at the district level.
- iv. The DLC will facilitate fostering of linkages with Banks/Financial Institutions to the beneficiaries.
- v. Wherever considered essential, a District Program Unit (DPU) would be created with necessary support structure for assisting the DLC in implementation of “Holistic Agriculture Development Plan”.
- vi. Besides, wherever required, for assisting the DPU, necessary institutional arrangements at sub-district level would be created. The district’s potential and requirements would be the criteria for identification of districts for establishing such institutional arrangements.

## e) Project Monitoring and Evaluation Unit (PMEU)



### Responsibilities of PMEU

- i. To undertake periodic monitoring and evaluation of implementation of projects.
- ii. delivery of project inputs for different components to different geographic units – institution and human capacity building, livelihood support, innovation and partnership fund etc.;
- iii. progress in monitorable indicators
  - a. outputs achieved (Yield, growth etc)
  - b. support structures created;
  - c. training and capacity building provided;
  - d. number of beneficiaries accessed external credit support;
  - e. progress in job creation & enterprises established
  - f. progress of social mobilization, number of FPOs/ Cooperatives/SHG's etc
  - g. institutional platforms;
  - h. access facilitated to financial; and livelihood and support services.
- ii. To perform the role of supervision, monitoring and review functioning and performance and arrangements at Sub-District level or any entity/experts/ consultants including project management consultants/advisories and others what so ever engaged under the projects

- iii. Perform any other responsibilities as entrusted by the Central Apex Committee or the EC
- iv. provide a periodic measure of inputs, activities and outputs in different project components;
- v. assess the process of implementation (conversion of inputs into outputs) and identify factors critical for that conversion;
- vi. verify the project related assumptions particularly in the early stages of the project;
- vii. provide an assessment of the pre-project situation in different states;
- viii. assess the achievement of the project objectives at different points of time and make the primary stakeholders an integral part of the M&E system;
- ix. facilitate regular management review and adaptation; and
- x. to assess the livelihood outcomes and the impact of the project
- xi. Ensure subsidies are extended through DBT mode & data captured & displayed in public domain.