



सत्यमेव जयते

**Report of the
Union Territory Level Apex Committee
(UTLAC)
Jammu & Kashmir**

**Jammu & Kashmir Towards Sustainable and
Self-Reliant Agricultural Revolution**

December 23, 2022

Chapter 1

Vision, Mission and Objectives

It is important to have a clear destination, such that the intended results are clearly defined and if achieved should demonstrate in quantifiable and qualitative terms the changes in social & economic status of the target-society vis-à-vis the pre-intervention initiatives. However, no destination can be an end by itself. Development and change are expected to ever progressive, which implies continuous shifting of milestones from time to time. This entails consistent and concerted efforts towards the new destination by introducing appropriate programmes & projects. In essence, every destination arrived at should only be considered as an interim achievement and, a new journey has to begin from there.

In consonance with this, it would be appropriate to adopt well defined vision, mission and objectives such that the spirit is aptly translated into doable, as the implementation rubber hits the road.

Vision : **Transform the agricultural economy of Jammu & Kashmir as integrative of the bio-economy**

Mission : Assess the union territory's agriculture from its current nature of subsistence to commercial economy, based on the triple principles of economic progress, equitable distribution of the gains, and ecologically sustainable practices.

While doing so, ensure the transformation of the agricultural sector into an agri-enterprise and, that it results in productive jobs & secure incomes for the farmers, nutritional-security for the consumers and triggers overall economic growth of Jammu & Kashmir by secondary & territory sectors.

- 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 with 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.

Objectives:

- Adopt comprehensive mandate for the agricultural sector, which encompasses achievement of food & nutritional security for the people, generation of productive jobs & wholesome incomes for the agri-community, including the fringe & marginalized sections, and facilitates secondary agriculture as an extension of the primary agriculture.

- Adopt and practise agricultural-value system (AVS) as the basis of the primary sector, so that the farm gates and markets are integrated and, there is two-way flow of information between the two.
- Adopt diversified approach at both sub-sectoral level and, at component level within each of the sub-sectors of the larger agricultural sector, with a view harvesting a broad-based potential while simultaneously imparting the system an in-built risk management resilience.
- Adopt a production-matrix, that is in favour of high-value agriculture and, includes niche activities of the union territory.
- Adopt climate-resilient and climate-smart agriculture systems, that minimize production & income losses and, optimize return on investment on a sustainable basis.
- Adopt landscape approach to the system of agriculture, such that larger ecosystem is nurtured and, the concept of One-Health is promoted.
- Adopt science, technology and innovation as the pivot of transformation.
- Adopt digital technology, inclusive of emerging technologies all along the agricultural value chain.
- Adopt secondary agriculture as the foundation for the bio-economy of J&K, by promoting agro-processing (food and non-food) at different levels and Agri-Startups supported by a conducive ecosystem.
- Adopt an ever-green system that focuses on building capacities of all the stakeholders including the farmers & landless agricultural labour, and is supported by an efficient & effective agricultural extension mechanism.

Project 26. Technological Interventions for Fish Seed & Trout Production in UT of J&K

Background:

- ❖ J&K has a dynamic fisheries sector in the form of trout culture, farm fisheries, sport fisheries, reservoir fisheries and other allied activities.
- ❖ There however, exists a huge gap between demand and production of fish.
- ❖ The seed production and rearing activity is plagued by age old infrastructure and inbreeding depression in stocks
- ❖ Absence of modern technologies makes the sector vulnerable to changes in water availability.

Interventions:

1. Import of genetically improved variety of fish seed
2. Establishment & upgradation of the hatcheries/fish rearing units
3. Establishment of new hatchery units in clusters mode
4. Production & post-harvest management

Key outputs:

1. 100 lakh eyed ova imported from Europe
2. Seed production increased from 15 -30 million (trout) & 62 to 100 million (carp)
3. 10 new hatcheries & 12 modernized
4. Construction of 1100 raceways
5. Construction of 500 (RAS) & 120 Biofloc
6. 4 cold-storage cum ice plants
7. Four (4) disease/quality testing labs
8. 13 new fish feed mills

Key outcomes:

1. Availability of good quality seed throughout the year
2. Judicious use of land & water resources
3. 30% reduction in cost of seed and 35% increase in survival rate
4. Double fish production (trout additional =1700 tonnes, carps; additional= 1200 tonnes)
5. 100% increase in farmer income
6. Increase in shelf life & reduction in post-harvest losses (28%)

Jobs & enterprises:

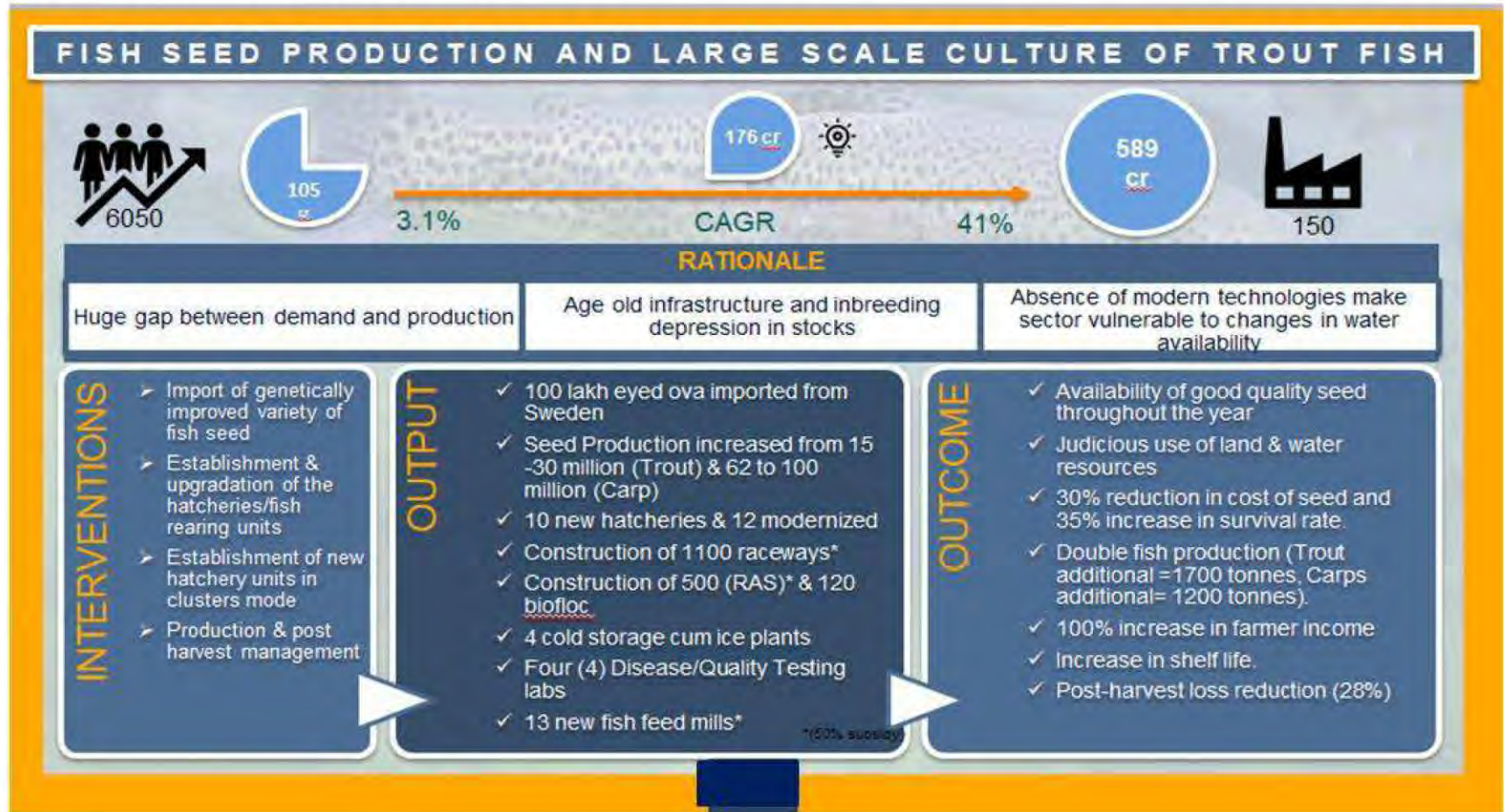
- 6050 jobs and 150 enterprises will be created in five years.

Budget: ₹ 176.06 cr.

(Project details, Page 211-217)

Project 26. Technological Interventions for Fish seed and Trout production in UT of J&K

26.1 Interventions, Output and Outcome



26.2 PERT CHART

Objectives	Activity	Output	Measurable Indicator	Impact/Outcomes	Timeline	Organization
Fish Seed Production/Improvement	Up gradation of hatcheries	Double in seed Production	Two-three tier hatcheries = 8+4=12 (All Govt.)	Judicious use of land & water resources.	1 – 5 year	J&K Fisheries Department
	Import of good quality brood stock and fish seed	Availability of good quality seed throughout the year	100 lakh seed of Genetically improved seed	Availability of good quality seed throughout the year.	1 – 5 year	J&K Fisheries Department
	Establishment of new hatcheries	Seed production at mass level	New hatcheries= Trout 10 [3 (Govt.) + 7 (Private)]; Carp 2 (Govt.).	Employment to 2050 persons/day (also employment to several skilled & unskilled persons during Pre & post construction)	1 – 5 year	J&K Fisheries Department
	Establishment of feed units/mills	Availability of Fish feed at doorstep of farmers	Feed Mills= Trout 7 [2 large (Govt.) + 5 small (Private)]; Carp 6 [2 large (Govt.) + 4 small (Private)]	30 % reduction in cost of seed as survival rate will increase.	1 – 5 year	J&K Fisheries Department
	Establishment of Carp Recirculatory Aquaculture system	Backyard Mini RAS	Carp – RAS Backyard 500 (Private)	Additional Fish production from small households like Backyard	1 – 5 year	J&K Fisheries Department
	Establishment of Biofloc units	Fish Production from heterogeneous organic matter	120=20 (Govt.) +100 (Private)	Production of fish from modern Technologies	1 – 5 year	J&K Fisheries Department
Trout Fish Production	Strengthening and Modernization of existing farms.	Double in Fish Production	Fifty (50) existing farms will be strengthened and modernized	Judicious use of land & water resources.	1 – 5 year	J&K Fisheries Department
	Construction of raceways	Double in fish production (Trout additional =1700 tonnes Carps additional= 1200 tonnes).	Construction of 1100 raceways (200 in Govt. + 900 in Private Sector)	Employment to 4000 persons/day (also employment to several skilled & unskilled persons during Pre & post construction); 100 % increase of income per	1 – 5 year	J&K Fisheries Department
	Recirculatory	Boost in Fish	RAS [Mega – 40		1 – 5	J&K Fisheries

	Aquaculture system	production; Conservation of water and land.	(5+35); Medium-50 (5+45); Small-200]	capita of farmer	year	Department
Production Management (seed and Fish)	Establishment of Disease & Quality Testing labs.	More seed and fish production by controlling mortality	Disease and Quality Testing labs =4 (Govt.)	Production of quality seed and fish 35 % increase in survival rate. Increase in employment & income Increase in shelf life Post-harvest loss reduction (28 %) Direct employment to 200 people & to several skilled & unskilled	1 – 5 year	J&K Fisheries Department
	Mobile labs/clinics	Control of diseases and increase in fish production	Mobile Clinics/veins=4 (4 Govt.)		1 – 5 year	J&K Fisheries Department
	Refrigeration vehicles=12(6 Govt. + 6 Private)	To save the fish production from being degraded	Refrigeration vehicles=12(6 Govt. + 6 Private)		1 – 5 year	J&K Fisheries Department
	Cold storage/ice plants = 4 (Private)	To increase the shelf life and get returns as per the formers choice	Cold storage/ice plants = 4 (Private)		1 – 5 year	J&K Fisheries Department
Research & Development	Development of low cost feed	Development of cheap and balanced cold-water fish feed with lower FCR, better growth and lower cost of production.	Development of Feed formulae for different culture ablecoldwater fish species and creation of feed mill facilities at SKUAST-Kashmir	Cost effective feed from sustainable local sources.	1 – 5 year	SKUAST-K
	Genetic intervention for growth and breeding in coldwater fish species	Development of pure status of collected stocks. (Marker assisted selection: Molecular Markers) & Transcriptome analysis of growth and reproductive genes of different stocks.	World class genetic laboratory facility and availability of genetically improved germplasm	Development of high quality andgenetically improved brood stock	1 – 5 year	SKUAST-K
	Seed production of indigenous fish species for ranching & rehabilitation of natural water bodies	Breeding technology for seed production of important indigenous fish species &	Production of Seed, Spawn/fry/fingerlings on mass scale. Fully operational hatchery complex with indoor	Increase in fish production through both Capture & culture fisheries	1 – 5 year	SKUAST-K

	and diversification of candidate aquaculture species	Commercial seed production of rainbow trout, common carp, grass & silver carp.	tanks & small cement cisterns for winter rearing of broodstock.			
	Disease diagnosis & Prophylaxis:	Establishment of advanced Laboratory & Creation of Repository of fish pathogens, Establishment of Primary cell culture system	Fully operational Laboratory for Level-III diagnostics & characterization and identification of Pathogens.	Creation of baseline data of disease incidence Reduction in disease incidence & Real-time management of viral, bacterial and fungal pathogens	1 – 5 year	SKUAST-K
	Value addition and product development	Development of new technologies in the field of fish processing and shelf-stable fish product development	Availability of hygienic fish/ fish products in the local markets & establishment of well equipped facility for carrying out the research on product development.	Reduction of post harvest loses; creation of value chain of fish and fishery products. & proper utilization of the fish produce	1 – 5 year	SKUAST-K

26.3 :Budget Table 1 (₹ Cr)

Objectives	Activity	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Fish Production/Improvement	Seed						
	Import of genetically improved variety of Trout seed/ Raising of new brood stock.	1.1	0	1.1	0	0	2.2
	Up-gradation of Existing infrastructure; 1) Trout; 2) Carps	0.9	0.9	0.9	0.9	0	3.6
	Trout hatcheries; i) Carp hatcheries ii) Carp ponds	2.712	1.412	3.412	1.412	0.412	9.36
	Trout Feed mills	2.65	0.19	2.8	2.8	0.15	8.59
	Carp Feed Mills	2.65	2.65	0	0.18	0.15	5.63
	Carp – RAS (Backyard Mini RAS)	0.257	0.257	0.257	0.257	0.257	1.285
	Biofloc	1.147	1.147	1.147	1.147	0.774	5.362
Trout Production	Fish						
	Strengthening and Modernization of existing farms.	2	2	2	2	2	10.00
	Construction of 1100 raceways (200+900)	7.862	7.862	7.862	7.862	5.0325	36.4805
	RAS Mega – 40	2.3	2.3	2.3	2.3	2.3	11.50
	Medium - 50	1.425	1.425	1.425	1.425	1.425	7.125
	Small-200	1.545	1.545	1.545	1.545	1.545	7.725
Production Management (seed and Fish)	Establishment of Disease & Quality Testing labs.	0.5	0	0.5	0	0	1.00
	Mobile labs/clinics	0	0.7	0.7	0	0	1.40
	Refrigeration vehicles=12(6 Govt. + 6 Private)	0.75	0.75	0	0.75	0	2.25
	Cold storage/ice plants = 4 (Private)	0.2	0.2	0	0.2	0.2	0.80
	Contingency	3.432	3.772	4.152	4.562	5.0245	20.9425
	Capacity building (trainings/workshop/tours etc.)	0.1	0.1	0.1	0.1	0.1	0.50
	Recurring cost	4.5	4	5	4.5	4	22.00
Research & Development	Development of low cost feed	1	1	0.5	0.5	0.5	3.5
	Genetic intervention for growth and breeding in cold water fish	1	1	0.5	0.5	0.5	3.5
	Seed production of indigenous fish species for ranching & rehabilitation of natural water bodies and diversification of candidate aquaculture species	1	1	0.5	0.5	0.5	3.5
	Disease diagnosis & Prophylaxis:	0.5	0.5	0.25	0.21	0.1	1.56
	Value addition and product development	1.5	1.5	0.5	1	1.5	6.00
	Training, workshops, awareness programmes.	0.05	0.05	0.05	0.05	0.05	0.25
	CAPEX	41.08	36.26	37.50	34.70	26.52	176.06
	CSS						0.00
	TOTAL						176.06

26.4 Budget Table 2 (₹ Cr)

Objectives	Organization	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Fish Seed Production/Improvement	Development Dept.	11.416	6.556	9.616	6.696	1.743	36.027
	SKUAST-K	0.00	0.00	0.00	0.00	0.00	0.00
	SKUAST-J	0.00	0.00	0.00	0.00	0.00	0.00
Trout Fish Production	Development Dept.	15.132	15.132	15.132	15.132	12.3025	72.8305
	SKUAST-K	0.00	0.00	0.00	0.00	0.00	0.00
	SKUAST-J	0.00	0.00	0.00	0.00	0.00	0.00
Production Management (seed and Fish)	Development Dept.	9.482	9.522	10.452	10.112	9.3245	48.8925
	SKUAST-K	0.00	0.00	0.00	0.00	0.00	0.00
	SKUAST-J	0.00	0.00	0.00	0.00	0.00	0.00
Research & Development	Development Dept.	0.00	0.00	0.00	0.00	0.00	0.00
	SKUAST-K	2.85	2.85	1.30	1.51	1.50	10.01
	SKUAST-J	2.20	2.20	1.00	1.25	1.65	8.30
TOTAL		41.08	36.26	37.50	34.70	26.52	176.06

27.4: Budget Table 2 (₹ Cr)

Objectives	Activity	Organization	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Build an integrated network of different stakeholders for aggregation, value processing, and marketing for wool & pelt	Creation of a common platform for Sheep farmers, KVK's, Develop.Deptts, Res. institute, Univ., SHG's, NGO's, FPO's, Financial Institutions and industry	Development Dept.	0.80	0.80	0.00	0.00	0.00	1.60
		SKUAST-K	0.00	0.00	0.00	0.00	0.00	0.00
		SKUAST-J	0.00	0.00	0.00	0.00	0.00	0.00
	Identification of constraints and development of sustainable value processing modules for wool industry	Development Dept.	0.00	0.00	0.00	0.00	0.00	0.00
		SKUAST-K	0.10	0.10	0.00	0.00	0.00	0.20
		SKUAST-J	0.10	0.10	0.00	0.00	0.00	0.20
	Build an integrated network of different stakeholders for aggregation, value processing, and marketing for wool	Development Dept.	1.00	1.00	0.00	0.00	0.00	2.00
		SKUAST-K	0.00	0.00	0.00	0.00	0.00	0.00
		SKUAST-J	0.00	0.00	0.00	0.00	0.00	0.00
Establishment of common facilitation centers at district/regional levels based on the cluster approach and as per feasibility & resource base	Creation of shearing, grading and balling mobile units (30 units).	Development Dept.	6.00	6.00	0.00	0.00	0.00	12.00
		SKUAST-K	0.00	0.00	0.00	0.00	0.00	0.00
		SKUAST-J	0.00	0.00	0.00	0.00	0.00	0.00
	Integration of the wool trade activities in the existing mandi's in the region (04).	Development Dept.	2.00	2.00	0.00	0.00	0.00	4.00
		SKUAST-K	0.00	0.00	0.00	0.00	0.00	0.00
		SKUAST-J	0.00	0.00	0.00	0.00	0.00	0.00
	Creation of cold storage infrastructure for pelt preservation on private enterprise basis and govt. facilitation centers	Development Dept.	5.20	4.00	0.00	0.00	0.00	9.20
		SKUAST-K	0.00	0.00	0.00	0.00	0.00	0.00
		SKUAST-J	0.00	0.00	0.00	0.00	0.00	0.00
Revival of wool board and cottage-based industry of wool & pelt.	Creation of Rs. 20 Cr. revolving fund for revival of wool board	Development Dept.	10.00	10.00	0.00	0.00	0.00	20.00
		SKUAST-K	0.00	0.00	0.00	0.00	0.00	0.00
		SKUAST-J	0.00	0.00	0.00	0.00	0.00	0.00
	Revival of wool-based cottage industry and artisan forums through capacity building, international exposure of trainers/scientists/startups, training of trainers and technology support.	Development Dept.	0.50	0.50	0.50	0.50	0.50	2.50
		SKUAST-K	0.25	0.25	0.25	0.25	0.25	1.25
		SKUAST-J	0.25	0.25	0.25	0.25	0.25	1.25
Research & Development on developing diversified woolen and fur-based value-added products	Technology development for value added wool and fur-based products and CFC for fur processing at SKUAST K	Development Dept.	0.00	0.00	0.00	0.00	0.00	0.00
		SKUAST-K	3.95	2.45	0.46	0.44	0.20	7.50
		SKUAST-J	1.90	0.18	0.18	0.16	0.08	2.50
TOTAL			32.05	27.63	1.64	1.60	1.28	64.20