



SKUAST-K Innovation, Incubation &
Entrepreneurship Centre

SKIIE Center

(SKUAST–K Innovation, Incubation and
Entrepreneurship Center)

Promoting Innovation led Growth through Entrepreneurship

***An interface between SKUAST-Industry-Government to
stimulate Innovation for businesses, services, tools and
products to drive the agri-economy in J&K***

Slogan:

- Promoting Innovation led Growth in Agriculture through Entrepreneurship

Vision:

- An Interface between SKUASTK-Industry-Government to Stimulate Innovation for Business, Services, Tools and Products to Drive the Agri-Economy in J and K

Mandate:

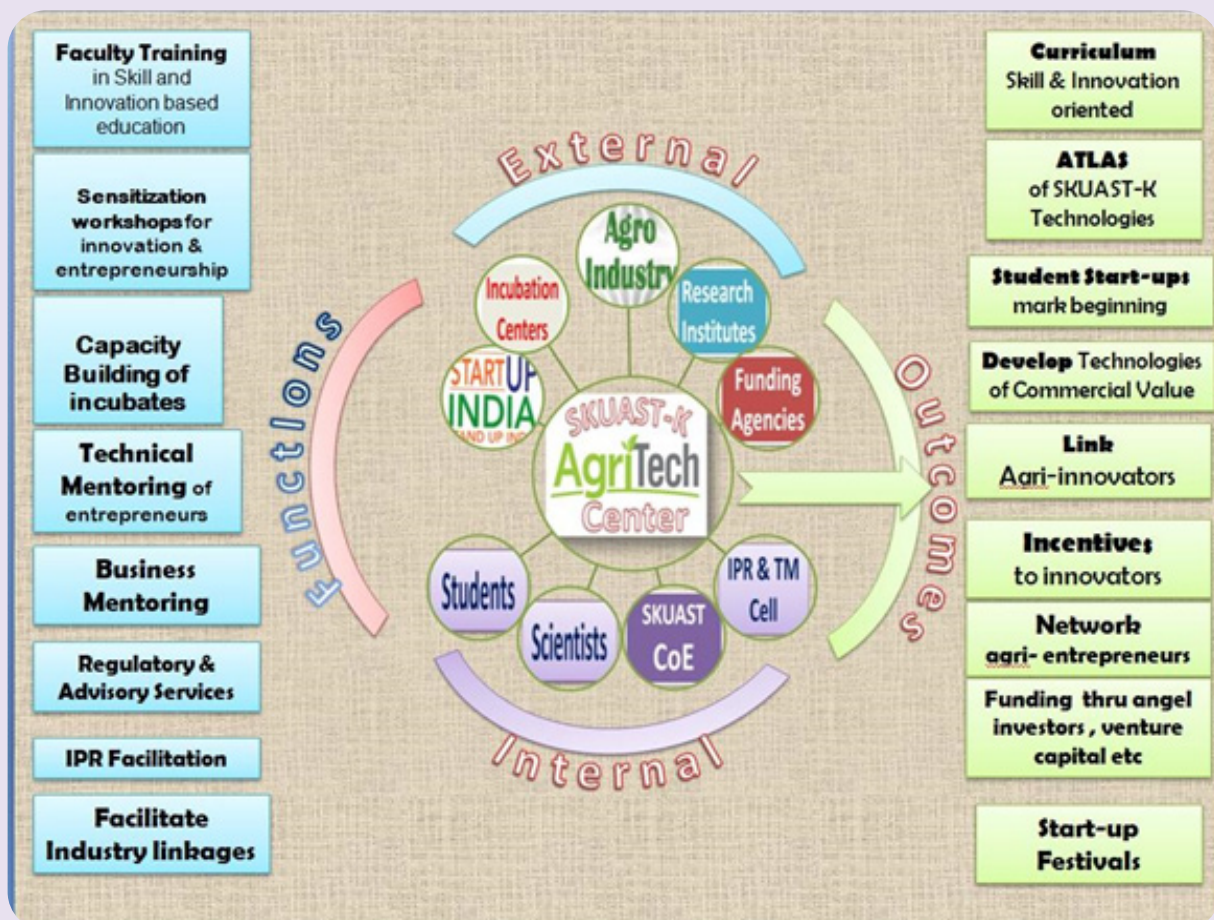
- Provide infrastructure and technical expertise to entrepreneurs in different areas of agriculture and allied disciplines along with assistance in commercialization.
- Conduct sensitization workshops for students, faculty, agri-entrepreneurs for

innovation and entrepreneurship in agriculture

- Scanning and Aligning SKUASTK Research Outcomes for commercialization and viability, and nurture them to later stages of development that will meet market needs.
- Business Advising to nurture, support and scale up technologies on product development, demand creation,
- Develop linkages with financial institutions for seed capital and industrial support to scale up.
- Technology and product exhibitions of prospective technologies and start-ups by scientists, students, entrepreneurs, institutions and communities

Concept Proposal

The Model of the SKIIE Center



Focus Area of Agri-entrepreneurship

- **Organic Agriculture**

- » Biofertilizers
- » Biopesticides
- » Organic Manures

- **Seed and Planting material**

- » Plant tissue culture for multiplication of virus free planting material
- » Hybrid Vegetable Seed production
- » High Density Apple Orchard Nurseries
- » Root stock multiplication of promising varieties
- » Seed certification using molecular markers

- **Protected cultivation**

- » Green House technology for cultivation of Vegetables
- » Green House Tech for multiplication of Planting material

- **Innovative Food Technology**

- » Food Process Technology
- » Post Harvest Technology
- » Animal product process Technology

- **Diagnostics**

- » Soil & Water Testing

- » Veterinary Diagnostics
- » Plant and vegetable disease diagnostics
- » Fish disease diagnostics

- **Precision Agriculture**

- » ICT and IoT in agriculture
- » Farm Mechanisation Tools
- » Weather based disease diagnosis
- » Soil, water and weather technology

- **Supply Chain Technology**

- » Farm Fresh Retail
- » Walnut – Value Chain Technology

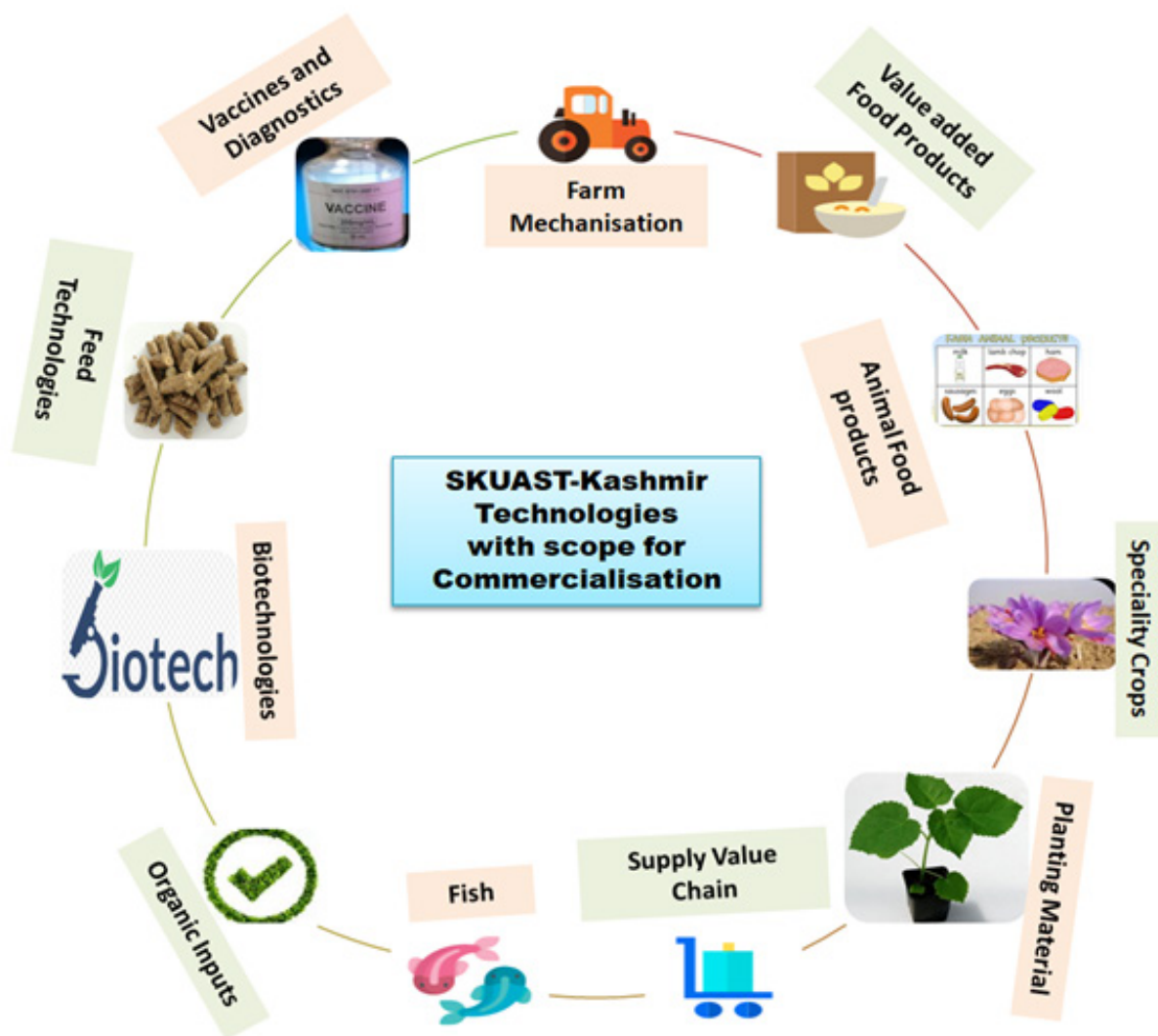
- **Floriculture**

- » Cut flower business
- » Flower Nurseries

- **Forest Bioresources**

- » Medicinal plants-
- » Aromatic Plants
- » raising quality nursery stock of conifers
- » Clonal Forestry with conifers:
- » willows for basketry and wicker industry
- » Selection and propagation of floss free Male Poplar clones

SKUAST-K SKIIE Center to Explore the Un-explored Technologies



Building to House the Center

Office Rooms	04 Nos
Conference Room	01 No (to house 50-100 people)
Establishment section	01 No
Documentation / Archive	01 No
Acctts section	01 No
Museum to display Technologies	01 No

Background:

Entrepreneurship and Start-up Policies play a vital role in the economic and social development of a nation. Jammu and Kashmir Region is a bio-resource rich region having huge market potential for promoting entrepreneurship/ start-ups to create employment opportunities. Educational institutes in general and farm universities in particular have a significant role in shaping the Start-up movement at region level given the fact that J&K is largely an agrarian region. To compete successfully in knowledge based global economy, innovation is vital. There is a need to transforming system of knowledge generation and utilisation for generating economic growth by filling a critical gap in the region innovation landscape. Universities, especially the region farm universities are the key platform for generating new knowledge and its conversion to wealth. However, absence of effective institutional mechanisms in region agricultural universities for translating research output into technological wealth is a major impediment.

Over a period of time, in the R&D output of the SKUAST-Kashmir, in terms of publications, IP, research translation and technology commercialization has been well recognized at national level with many firsts to its credit. These research outputs (both products and processes) are playing an important role in the region's economic development. Ranging from high value crops to animals, Animal vaccines, Organic inputs, Floriculture, High Density Fruit Planting material, SKUAST-K has successfully demonstrated commercial value of its technologies and products that can be up-scaled through entrepreneurship. University is continuously working in identified focal areas where knowledge driven innovation can provide solution to emerging issues facing farm sector including food processing and value addition, hybrid seed production in vegetables, high value exotic vegetables, animal products, Forest bio-resources (including medicinal and aromatic plants), biotechnology derived products and drug discovery.

Recently SKUAST Kashmir has been very proactive in shaping the policy and legislative framework for region's first Start-up Policy in 2018. University has proactively contributed

towards framing the region policy to kick start the commercialization of farm based products and technologies that can support regions agriculture by providing key inputs, mechanization as well as promote value addition. The region start-up policy of the Government has identified Agriculture, Horticulture and value addition and processing as key strategic areas for initiating innovation led growth. In this context, it is appropriate to region that even though the technological interventions of SKUAST-K have transformed the farm output landscape appreciably, yet it is far from optimum. Therefore creating an institutional framework for effective University-Industry-Business interface is highly imperative. The proposed technology enabling centres at SKUAST-K aims to create an enabling ecosystem for promoting entrepreneurship. It seeks to transform the available resources to accelerate the translation of research into profitable products and services. It seeks to create a vital resource which will help to drive economic growth by bridging the gap between concept and commercialization and enhancing innovation in specific technology areas. The major activities to be undertaken under the proposed **SKIIE CENTER** would broadly include promoting commercializing University technologies, reorientation of curriculum, sensitization and ideation workshops as well as networking with premier institutions and business houses to create such operational framework.

Problem Regionment

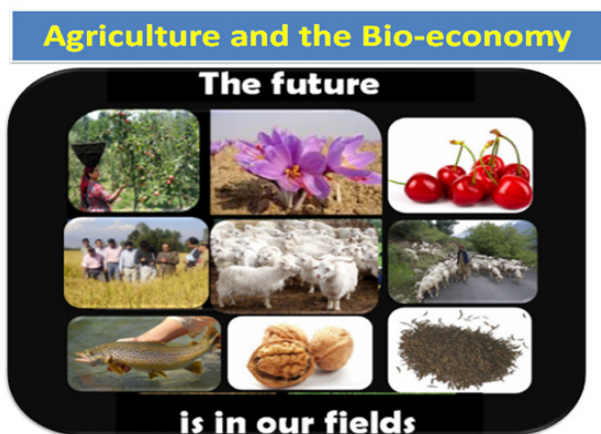
Despite being a agrarian economy, the estimated contribution of agriculture to Region Gross Domestic Product (GSDP) has fallen from 28% in 2004-5 to 16% in 2011-12. While 70% of the population depends directly or indirectly on agriculture, the proportion of the labour force engaged in agriculture has declined from 85% in 1961 to 28% in 2015. This is largely due to lack of development in support industries that could boost the growth and create employment and livelihood. Innovation led growth is a key area of transformation in a seemingly disturbing situation across all major components of agricultural landscape of region with declining factor productivity, deterioration of biophysical resource base as well as distraction of youth.

Agricultural Landscape in J&K

The northern most Himalayan region J & K, forming the crown of the diverse India, represents one extreme of those 12 diverse agro-climatic zones. Its climatic diversity and the varied physiography create challenges and offer opportunities to the growth of agriculture in the region of J & K. The region offers tremendous opportunities and potential for building the basis for knowledge based agri- economy to harness its rich bio-resources. Amongst the opportunities are the comparative advantages of the region in hydroelectric power, mineral resources, forest bioresources, niche crops and animals, diverse cultural heritage, tourist destination for its serene beauty, and overall a web of educational institutes producing the next gen technically trained human power. It has the regional advantage in agriculture crops:

- i. Niche crops (like Apple, Saffron, Walnut, Kala zeera, Apricot, Cherry , Scented land races of Rice, Pashmina fibre and Shawl industry, Cold-water trout fish, See Buck thorn etc)
- ii. Organic products
- iii. Forest bio-resources (medicinal and aromatic plants),
- iv. The potential for off-season vegetable and floricultural crops
- v. Vast alpine and sub-alpine pasture lands for livestock rearing
- vi. Huge domestic market of 1.3 billion people for temperate niche and seasonal products.

Opportunities to be harnessed



The unique geographical position in North Western Himalayas and its bestowed comparative advantage poises region in a position of potential leadership in crops and commodities with niche advantage. However, a mere production based value chain invariably is a static system that does not have spin off effects for employment generation as well as entrepreneurship. In order to harness the opportunities offered by its unique crops and commodities including high value niche crops, horticulture, floriculture, medicinal and aromatic plants, agro-forestry, processed products, animal products, cold water fisheries as well as other allied sectors such as handicrafts and tourism, a holistic approach based on innovation led growth is required. This will lead to translational research that can tap the huge human resource capital in the region and create employment and livelihood. However, an enabling institutional framework is lacking and needs to be reinforced. The region government has recently shown its keen interest in creating such framework at various levels: from research institutions that will provide innovation support as well as other organizations that will spearhead the up-scaling and commercialization. SKUAST-K seeks to create incubation and acceleration set up and mainstreams it with the innovation system of the university to create a skilled manpower that is keen to take up entrepreneurship in frontier areas of agriculture and its allied sectors.

Role of SKUAST-K in transforming farming landscape of region

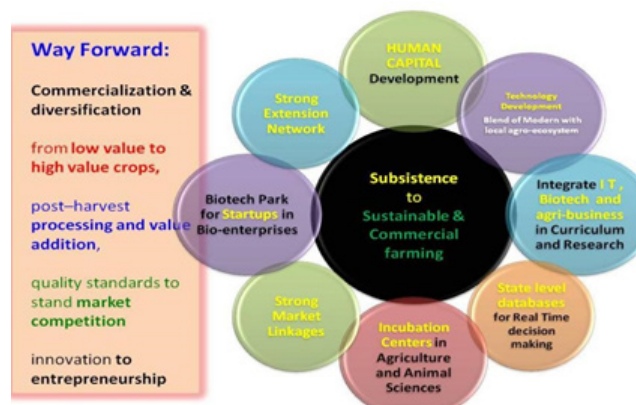
SKUAST-Kashmir has emerged as a leading farm university in hill and mountain regions that has been at the forefront of creating technologies/ products/processes that can not only provide solution to farm problems but also create tremendous opportunities for creating a platform for start up business. However, there has been no institutional mechanism in region in general as well as the university in particular to create a system of harnessing farm innovation driven by research in key areas of agriculture and consequently the development of model business units that could be replicated across region is

far from being visible. Despite not so welcome situations for industrial growth in manufacturing sector, there are huge business development opportunities in farm sector that can be driven by innovation and have local market availability also. University has successfully demonstrated the business development potential in specialty rice such as Mushkbudji and Kamad, which are highly encouraging. The need of the hour is to mine the already developed technologies/products/processes as well as the proof of concepts and prototypes for possible up-scaling through appropriate start up incubation and acceleration support systems.

However, a major step towards achieving the mandated goals of an effective AGRITEC centre is to mainstream the initiatives through academic reforms and reorientation of curriculum that not only promotes excellence in scholarly output but also encourages innovations that could provide solution to problems facing farm sector. This is to be appropriately backed by a proactive support system that caters to logistic and financial aspects related to model entrepreneurship systems that could become an order of the day. The J&K government has put in place supportive and ambient entrepreneurship promotion policy that can motivate budding entrepreneurs to take up entrepreneurship as a career and become job providers as well as address major bottlenecks for growth of a remunerative farm sector. Even J&K Bank, the leading farm sector lender in J&K has also a proactive policy for promoting start-up initiatives. Promoted by PM's Start-up India movement ThinkPod, a co-working facility, has a platform come up in J&K to provide a platform to Kashmir-based start-ups. Similarly, in order to provide mentorship, investment and an enabling eco-system to start-ups in Jammu Kashmir, the Confederation of Indian Industries (CII) has launched an Angel Network today in Jammu. The CII J&K Angel Network aspires to be the single largest platform in Jammu Kashmir and the only preferred choice for aspiring entrepreneurs to meet and network with the group of business leaders, who can fund, nurture, mentor and help them build a stronger business plan. The policy and financial support of the region government is highly conducive for growth of start-up culture in region where in university graduates are motivated

to become entrepreneurs. The university can act as an effective conduit for facilitation by providing platform for innovation, proof of concept testing, demonstration and up-scaling by an inclusive system involving research, policy as well as financial institutions for promoting R&D output and contributing to region developmental goals.

Proposed Roadmap



In order to reorient the agricultural landscape of the region, there is a need for multipronged strategy that takes care of obvious bottlenecks in the development of a farm atng system that not only produces enough quality food and other products but also creates substantial opportunities for livelihood and employment. The research needs to be translated into products that can be commercialised to created value. Farm universities like SKUAST-K have a rich repository of research outputs in form of processes and products that can be readily channelized into marketable entities creating employment at different points of value chain.

The proposed **SKIE** centre seeks to build a nodal centre in the university to identify the technologies and products that can be immediately up-scaled by encouraging the students as well as prospective entrepreneurs in PPP mode. The centre will also identify gaps in technological interventions and inspire translational research to create solutions. The centre will act as a conduit between the university and the stakeholders to identify technological requirements modulate the focus research areas in the translational research centres in the university as well as train students to become prospective entrepreneurs. The university has already drawn an ambitious

roadmap for driving such change in mindset from mere production based enterprise to value based enterprise in which the values are added at various levels of chain creating substantial spin off effects in form of income and employment generation as well as attracting talented and ambitious minds to invest in knowledge creation as well as translation.

SKUAST-Kashmir seeks to take up leadership role in evolving infrastructure, human resource as well as knowledge base for creating leaders and entrepreneurs of tomorrow and is contemplating to reorient its academic content and programmes to realign them with innovation, translational research and harnessing bioresources of J&K region in order to transform agricultural landscape.

Expected Outcomes:

- A university Agri-technology commercialisation cell will be established
- Institutional framework for innovation led entrepreneurship, incubation and acceleration will be created.
- Innovation driven start ups and student enterprises
- Enhanced academia-industry-business interface
- Framework for problem based research that can lead to solutions
- Innovative curriculum that drives innovation, entrepreneurship and business