

## **CAIE MAJOR FOCUS AREAS:**

1. **Ideation:-** Ideas will be initiated from all the sections of the society specially students through the submission of short note of 2 to 3 pages to CAIE. These potential ideas will be assessed through expert committee and will be promoted accordingly.
2. **Identified business sectors:-**
  - A. Service Sector
  - B. Live stock
  - C. Farm management
  - D. Agri- inputs
  - E. Biotechnology
  - F. Agribusiness
  - G. Food processing
  - H. IOT Application in agriculture
3. **Technology commercialization through ventures :-** RVSKVV has developed several innovative technologies for the benefit of farming community. These technologies requires up scaling through partnerships for faster demonstration.

### **The potential areas for each major area of identified business sectors are as follows:-**

- A. Service sector:-** The service sector is an important area where lot of services are required for the farmers in the rural areas to make it hassle free farming with the latest technology. Many small and marginal famers are not aware of the latest technologies of agriculture to raise their income in the small holding. Hence service sector can raise the income of small holding farmers with latest advancements in agriculture innovations and technologies some major service sector areas identified for start ups are:

- |  |   |
|--|---|
| ❖ Farm advisor                         | ❖ Agriculture Journalism and mass communication |
| ❖ Food safety Audit and Quality        | ❖ Crop quality certification                    |
| ❖ Organic farming adviser              | ❖ Custom hiring centre                          |
| ❖ Farmers producer organization- CEO   | ❖ Agro ecotourism                               |
| ❖ Plant protection services            | ❖ Soil, water, seed testing                     |
| ❖ Export and import document procedure | ❖ Livestock advisor                             |
| ❖ Commodity trading and future markets |   |

- B. Live Stock:-** The Chambal region of Madhya Pradesh is one of the potential areas for live stock production and management in the country. Many industries were established to process the milk. Almost every household in the rural areas are having minimum 5 to 6 buffalos for milk production along with the other farming activities. The milk productivity in the area is not satisfactory due to non availability of good quality fodder and feed to the cattle. Hence there is a tremendous scope for enhancing capacity of milk

production and improving by providing good buffalo breed, fodder feed as well as start up for milk collection aggregation, processing etc. There is an ample scope for goat and poultry production especially Kadaknath due to heavy demand of eggs as MP imports eggs from other states and meat in the domestic and export markets. The potential areas of this sector are:-

- ❖ **Kadaknath**
- ❖ **Dairy management**
- ❖ **Fodder and feed production**
- ❖ **Goat farming**
- ❖ **Milk trading**

**C. Farm management:-** This is a very important area for the farmers to tap the natural resources soil, water and utilize them for enhanced profitability in the farming. The areas like conservation agriculture water shed management micro irrigation, soil test based fertilizer applications integrated farming systems (IFS) etc can be adopted with the improved business plans in the farming to increase the profitability and improve rural livelihoods. The potential areas of this sector are:

- ❖ **Development of new varieties**
- ❖ **Natural/organic/precision farming**
- ❖ **Bio-waste/Agri-waste management**
- ❖ **Certification and branding**
- ❖ **Crop production**
- ❖ **Farm management**
- ❖ **Marketing**
- ❖ **Quality assistance**

**D. Agri-inputs:-** The cost of cultivation is increasing at a very faster rate due to increase in the prices of fertilizers, seeds, and plant protection chemicals etc. The profitability in the farming can be increased with the reduced cost of cultivation as well as getting the better price to the farm produce through the development of market linkages. The farmers' producer organization can take this issue through organized quality of agriculture production with well-defined quality standards and selling the quality produce at the higher price through aggregation. Similarly small and marginal farmers can be supported through capacity building for on farm production of all the inputs rather than purchasing inputs from the markets and it will drastically reduce the cost of cultivation and minimize the risk in the farming. The potential areas of this sector are:

- ❖ **Seeds**
- ❖ **Bio-control agents**
- ❖ **Alternate fertilizers**
- ❖ **Bio-fertilizers**
- ❖ **Vermi composting**
- ❖ **On farm production of inputs**

**E. Biotechnology:** RVSKVV has created state of the art facilities in the area of biotechnology. Looking into the huge investment requirement in this sector every needy organization cannot afford to have these facilities to speed up their crop improvement programs, through market assisted breeding, haploid technology, genetic purity testing mass production of tissue culture plants, etc are another area to generate income to the agristartups. The potential areas for agriculture biotech startups are:

- ❖ **Haploid technology**
- ❖ **DNA finger printing**

❖ **Tissue culture plants production**❖ **Marker assisted breeding**

**F. Agribusiness:** Innovations in agriculture during the last few decades brought the transformation in Indian agriculture. More recently, the priorities in agriculture sector are changing and several reforms have been introduced due to surplus production of all major commodities leaving oil seeds. This surplus production needs to be exported to demanding countries. The export of the commodities from India is possible if the production can meet the quality standards of the importing countries as well as the Indian farm produce should be produced at globally competitive price. To make it globally competitive, farmers should be reasonably subsidized as well as latest innovative agriculture technologies should be adopted. The potential areas having deliverable technologies to raise the profitability in the farming through agribusiness development area are:

- |                                     |  |
|-------------------------------------|--|
| ❖ Seed business                     | ❖ Fruit plants and sapling production  |
| ❖ Flower production                 | ❖ Organic vegetable production         |
| ❖ Precision horticulture            | ❖ Urban horticulture                   |
| ❖ Hydroponic farming                | ❖ Landscape designing and architecture |
| ❖ Multilayered vegetable production | ❖ Organic farming                      |
| ❖ Hi-tech nursery management        | ❖ Bamboo value chains                  |
| ❖ Apiculture                        | ❖ Mushroom production                  |

**G. Food processing:** This is one of the priority areas to raise the farmers' income manifold. Very limited agriculture produce is being processed in India. There is a huge potential to process the agri produce for raising the farmers' income. One product one district has been identified across the country, In Madhya Pradesh, RVSKVV has been designated as state level technical institution to coordinate and provide support services in the food processing sector. Several pilot plants are being established in colleges/KVK/ZARS centres of Vishwavidyalaya for promoting capacity building for entrepreneur. NABARD has sanctioned a pilot plant for processing of fresh fruits and vegetables at CIAE Gwalior. All the benefits of PM-FME schemes can be extended to potentially clients with the help of human resources available in the CIAE and RVSKVV Gwalior to promote agristartups. The potential area for entrepreneurs in the value chain based food processing sector in Madhya Pradesh are:

- |  |  |
|--|--|
| ❖ Honey processing                         | ❖ Processing and value addition of millets     |
| ❖ Processing and value addition of moringa | ❖ Processing and value addition of turmeric    |
| ❖ Processing and value addition of pulses  | ❖ Processing and value addition of seed spices |
| ❖ Processing and value addition of wheat   | ❖ Processing and value addition of oats        |

- ❖ Processing and value addition of Quinoa
- ❖ Processing of Mushroom
- ❖ Ready-To-Serve Juices
- ❖ Processing of onion and garlic
- ❖ Processing and value addition of groundnuts
- ❖ Processing of potatoes
- ❖ Processing and value addition of quality rice
- ❖ Processing of speciality corn
- ❖ Fruits and vegetables processing
- ❖ Processing of Medical and aromatic plants
- ❖ Processing of sugarcane and value added products
- ❖ Processing of oil seeds, groundnut, mustard

**H. IOT Application in agriculture:** Internet of things (IOT) is going to play a very important role in increasing profitability in the farming with smart farming technologies with effective decision support system. This will be helpful to provide the recent technologies as well as market information to the farmers door step. All these things will improve the profitability in the farming. In collaboration with Indian Institute of information technology and management (IITM's) Gwalior, there is a scope for lot of entrepreneurial opportunities for agriculture/ information technology graduates for business development. Some of the potential areas to be covered for start ups are:-

- ❖ ICT application in Agri Sector
- ❖ Deep learning for best agriculture Concept, tools, application and opportunities
- ❖ Robotics applications in Agriculture.
- ❖ Remote sensing applications in agriculture
- ❖ Agriculture data analytics
- ❖ Wireless server network in agriculture
- ❖ Data mining technologies and Agriculture
- ❖ IOT based smart farming
- ❖ Decisions support systems in agriculture

## **Technology commercialization through ventures:**

### **(1) Seed Venture:-**

Seed business Incubation is a programme of CAIE-RVSKVV aimed at promoting rural seed business ventures so as to bridge the gap between the demand and supply in the quality seeds through public – private partnerships. Following support services are provided for seed ventures.

### **Support Services**

- **Project Reports:** Detailed project reports for the seed business could be prepared.
- **Capacity Building:** Training would be given to the company officials to upgrade relevant skill sets required for running the business.
- **Breeder Seed Supply:** Breeder seeds of various crops would be supplied to the companies considering the availability.
- **Quality Control:** CAIE can facilitate quality control of on field seed production as well as seed testing for specific parameters.
- **Processing:** Besides imparting training on seed processing, companies can process their seeds through processing facilities of RVSKVV as per the custom service charges.

### **(2) Biofertilizer Venture**

RVSKVV is having strong research base and developed technologies in Biofertilizers. Entrepreneurs can avail these technologies and produce high quality Biofertilizers to fulfil the increasing demand from farmers.

### **Support Services**

- Access to information on bio-fertilizers
- Training program at RVSKVV on Biofertilizers
- Production technologies
- Access to microbial mother cultures
- Field visits by scientists
- Access to programs and exhibitions conducted by CAIE
- Business plan preparation

### **(3) Medicinal and Aromatic Ventures**

Ever increasing demand in ayurvedic medicines and nutraceuticals, business ventures based on medicinal and aromatic plants have excellent opportunities. Entrepreneurs can avail services provided by RVSKVV in establishing and for growth of their business.

### **Support Services**

- Access to information on medicinal and aromatic plants.
- Training programmes on package of practices and processing technologies.
- Access to planting materials.
- Field visits by scientists.
- Access to programs and exhibitions conducted by CAIE.
- Business plan preparation.
- Networking with agencies and Government.

### **4) Apiculture:**

Bee keeping, a non-land-based income generating agribusiness is emerging as an important component for integrated rural development and off-farm employment. It is a low investment and high-income generating business. The income generated from marketing of bee products improves social and economic conditions of the beekeepers. The honey, major bee product, has a high food value and provides cash income for sustainable living for the small farmers, landless laborer and tribal peoples. The target market for honey is Ayurvedic Industry, Food processing Industry, Exports and Domestic retail market. Other bee products as bee wax, pollen, propolis, royal jelly, bee venom are costly than honey which are also in great demand for pharmaceuticals, cosmetic industries, etc. A large acreage of area of flora of crops, flowers, fruits, vegetables, forest, wild grasses, etc. and diversified conditions provide great opportunity for bee keeping in Madhya Pradesh. Bee- keeping has the great potential of providing employment by the following ways:

- Bee keeping
- Collecting, processing, packaging, value addition, marketing and transportation of bee products.
- Quality testing of honey
- Manufacturing of bee-keeping Equipments
- Queen bee rearing/multiplication
- Multiplication of nucleus stock

The centre is having basic facilities of quality testing, processing and packaging of honey, bees wax, pollen, propolis, royal jelly, bee venom. In addition the centre is also having facilities of setting up of beekeeping equipment manufacturing equipments, quality nucleus stock production facilities, etc. These facilities can be utilized by bee keepers, unemployed rural youth, SHGs, FIGs, FPO, registered societies, etc. in public-private partnership mode.

## **Services**

- Transfer of technology
- Business consultancy through project reports and feasibility studies [DPR]
- Technology based Entrepreneurship Development Programs
- Financial assistance from Techno-preneur Promotion Programmes
- Market linkages
- Capacity building