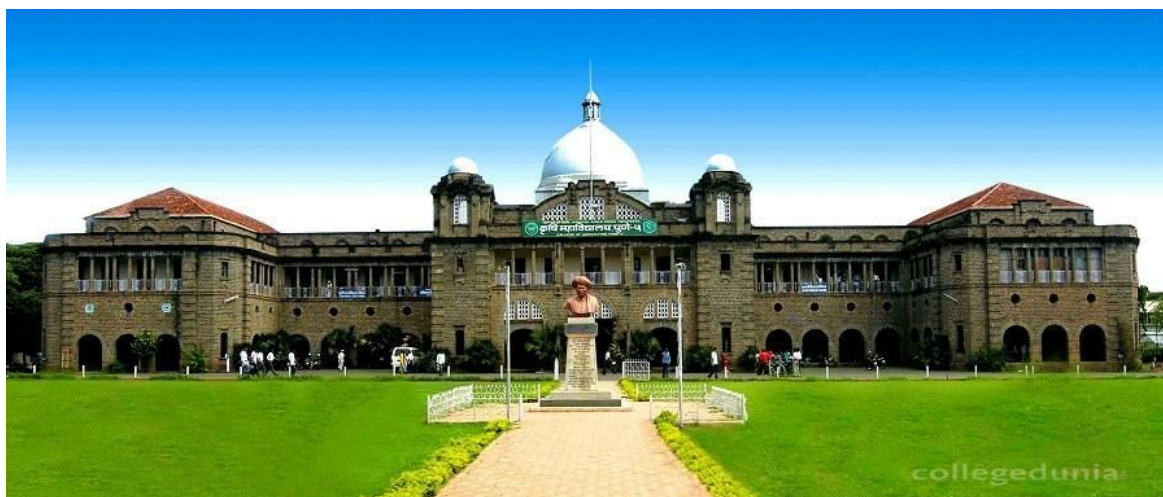


# VISION 2020



**COLLEGE OF AGRICULTURE**

**PUNE-411005**

**Mahatma Phule Krishi Vidyapeeth**

**Rahuri-413722**

**Maharashtra**

## COLLEGE OF AGRICULTURE, PUNE

### Strategic Plan 2014-2020

#### Introduction

The college is one of the historical agricultural colleges in the country established in 1907. It has more than hundred years of long history of advancing agricultural science, promising food security in poor communities of Maharashtra and India.

Considering the need to harness the growing demands of the farmers for new technologies and the knowledge and the skills of the agricultural graduates the Rural Agricultural Work Experience (RAWEX) programme was started in 1983 and revised as per IV Dean's Committee in the year 2006. Horticulture College was established in the premise in 1984. The year 1985 heralded the commencement of the Post-Graduate Degree programme at the college and Master's Degree in Agricultural Business Management in 2008.

Being very sensitive to the socio-economic growth of farmers, the college introduced the Hi-Tech Vegetable and Floriculture Project, in the year 2000, to train farmers in the field of protected cultivation. It helps even the agricultural graduates to gain entrepreneurial skills and hands-on experience in the cultivation and marketing of the produce of the poly-houses.

The winds of change in the economy of our country necessitated a revisit to course content of the agricultural education in India and it resulted in the change of syllabi as envisaged in the recommendations of the IV Deans' Committee. The new course content was introduced in the year 2007. The salient feature of the new syllabi is the introduction of the Hands-on Training and Experiential Learning for final year degree students.

To attract the foreign students, a new building of International Students Hostel was constructed in the year 2009 with all modern amenities. With a view to impart hands on training and developing entrepreneurship skills of undergraduate students and post graduate research, two new state-of-art laboratories viz; Bio-control and Bio-technology were established in 2010. The new Centenary Building, admeasuring about 12,000 m<sup>2</sup> built up area was inaugurated in 2012.

## **Section 1: Vision, Mission, Objectives and Functions**

### **Vision**

To be a leading College, taking undergraduate and graduate students to the highest levels of intellectual and personal development in the milieu of a competitive teaching, research and extension services in the country. Exemplifying the teacher-scholar model and by modelling best practices in education and agriculture. College maintains a reputation of excellence in Maharashtra State and throughout the country. College also strives to support student's success through productive work environment and excellent facilities.

### **Mission**

In order to achieve state of the vision, the College has developed a strategic agenda to be implemented over next five years (2014-2020) by providing quality agricultural education by conducting state - of the- art research, generating production technology, disseminating the technology to farmers and end users, generating self employment opportunities for the Agriculture and Horticulture graduates.

### **Objectives**

- 1) To provide graduate and post-graduate level quality education in agriculture, horticulture, and allied fields for producing competent human resources.
- 2) To encourage and provide agricultural education to girls particularly with rural background so as to increase their involvement in farming and allied agri-business activities and for empowerment of rural women.
- 3) To carry out basic, applied and need based research in various fields related to agriculture and horticulture, to provide appropriate and economic solutions to emerging problems and to develop technologies to improve socio-economic conditions of farming community
- 4) To arrange for effective transfer of various technologies to farmers and related organizations in order to improve agricultural productivity, production and overall economic conditions of the rural population of the state.
- 5) To develop suitable technologies for supporting the growth of subsidiary

- occupation and agro-based industry and generate self employment opportunities for the educated youths and women.
- 6) To provide technical advice to the State Government in planning and implementation of various schemes for overall socio-economic progress of the rural population of the state.

## **Functions**

- 1) To plan, coordinate and monitor teaching for developing scientific human resource and capacity building.
- 2) To enhance quality of higher education in agriculture faculties.
- 3) To target sets and provide mid-course correction.
- 4) To undertake fundamental and applied research programmes through faculty and post graduate students.
- 5) To assess implementation of teaching, research and extension programmes in relation
- 6) To develop appropriate need based technologies to solve the root level problems of the farming community.
- 7) To render the technical advice to the farmers on their specific problems.
- 8) To develop linkages with national, international organizations and line departments along with agro industries as per the needs and current trends.

## **Section 2: Assessment of the Situation**

### **2 A) Impact of external factors**

#### **a) Political**

Commitment of State and Central government to provide the funds for teaching, research and extension.

#### **b) Economic**

- 1) To attract agril. graduates towards farming, MSP regime for agricultural produce be strengthened

- 2) Backward / forward market linkages, to have free access to market and assured price.
- 3) Rate of economic growth in agriculture/horticulture is a critical factor in its development and poverty reduction.

### **c) Socio-cultural**

- 1) Diversified regional preferences and requirements.
- 2) Farming is not preferred as career option by the agril. graduates.
- 3) Low acceptability of high cost technologies.

### **d) Technological**

- 1) Progressive farmers are willing to adopt new technology.
- 2) Fragmented holding leads to diversified technological options.
- 3) Crop specific cultivation practices, leading to development of eco- region specific modules.
- 4) Gap between lab and land, leading to technology mis-match calling for On-Farm research.
- 5) Inadequate use of communication channels other than verbal.
- 6) Inadequate availability of power and lack of alternatives such as solar and wind power.

### **e) Environmental**

- 1) Depleted ground water and polluted water affects crop production, quality and productivity.
- 2) Lack of improved varieties resistant to biotic and abiotic stresses.
- 3) Global warming has resulted changes in cropping patterns.

### **f) Legal**

- 1) Marketing and trade laws relating to export/import of agricultural/horticultural produce.
- 2) Labour laws for regulating farm employment and wage issues.
- 3) Weak regulatory mechanism for various agricultural inputs.
- 4) Sanitary and phyto-sanitary standards.
- 5) IPR issues related to plant varieties, the rights of farmers and plant breeders

## **2 B) Stakeholders**

Department of Agriculture, Horticulture, Animal Husbandry, Progressive farmers, Grower's Associations, Agro-industries, Farmer-Scientist Forum, Milk Federations, Seed Corporations, Financial institutes, NGOs and Policy makers.

## **2 C) Strength and Weaknesses**

### **Strength**

The college has well equipped laboratories viz. Biotechnology, Bio-fertilizer, Bio-pesticide, Central instrument cell, Mushroom project, Hi-Tech Floriculture and Vegetable project and Dairy farm. Horticulture college has well equipped processing unit. In addition to this, colleges have well equipped classrooms, library, auditorium, gymnasium, boys and girls hostel, play ground, International student's hostel and guest house. Similarly, the college has videoconference, email, e-library, LAN, computer and Internet facilities for students and staff. College has well experienced, learned and reputed faculty members. These colleges are located in educational hub surrounded by many national and international institutes like Pune Vidyapeeth, National Chemical Laboratory, India Meteorological Department, National Research Centre for Grapes, National Research Centre for Onion and Garlic, Fig and Custard apple Research Centre, Saswad (Pune), National Institute for Abiotic Stress Management, Baramati, Horticulture Training Centre, Talegaon (Pune), IARI Centre for Plant Viruses, Indian Tropical Environment Research Center, Sub Centers of Indian Council of Agriculture Research, Agharkar Research Institute, Bhartiya Agro Industries Foundation, College of Agricultural Banking of Reserve bank of India, National Institute of Virology and Management Institutes like, Symbiosis, VAMNICOM, PUMBA, etc.

There are many private dairy farms, poultry farms, food processing units and Horticulture industries. This gives the students an opportunity to undertake some collaborative need based research work and provide better employment opportunities. Further, such facilities are useful for In-plant training under Experiential Learning Programme.

### **Weaknesses**

Insufficient man-power and delay in filling the vacant positions is one of the major problems. Under graduate teaching staff of the college is used for post graduate teaching programme which over burdens them and affects the teaching quality. Similarly, due to many private affiliated agricultural and horticulture colleges the work load of teaching staff of constituent colleges has increased many folds. Similarly, due to vacancies of ministerial staff, many times teaching staff has to carryout non-teaching and unrelated work. Less number of students appear for JRF, SRF and ASRB examinations due to attraction towards civil services. As the majority of the staff and students are from rural background, they have low proficiency in English language. Due to unavailability of formal training pertaining to the job profile of the university employees, they are unable to perform the duties to their best extent.

### **Opportunities**

During four years under graduate programme there is desirable radical change in the personality and overall development of the students and they are ready to face different challenges of life. Newly introduced experiential learning programme will help students to acquire technical abilities and entrepreneurship qualities to start their own agribusiness. Students can tap opportunities of export of value added agricultural / horticulture products. Many research institutes located in Pune region provide research avenues to the staff and students.

### **Threats**

At the time of establishment of the college, it was isolated and away from main city. Since the Pune city has grown by leaps and bounce, the college campuses come now in the heart of the city and create security problems. College farm and premises need protection by constructing boundary walls around the college campus to prevent illegal encroachments and trespassing.

Increased number of affiliated / private colleges in various faculties have overburdened the existing staff of constituent colleges. This may adversely affect education quality.

## **2 D) Needs to Learn**

Maharashtra has a diverse agriculture system well adapted to equally diverse agro-climatic conditions and is largely concentrated with small holders with low productivity. Research efforts need to be concentrated for production and effective use of economically viable technology interventions benefiting small holders to increase per unit productivity in line with growing population and demand for quality.

The increasing threats like global warming caused increase in Green House Gas emission which also needs to be suitably addressed by developing future prediction modules with requisite technological arrangement using modern tools for sustainable production.

Scientific manpower of the institute needs to be trained in modern techniques for overall productivity enhancement coupled with human resource development. The programmes in the areas of biotechnology, diagnostics, improved crop varieties, genomics, waste management, value added product, production, modeling and forecasting for crop weather and diseases needs to be developed.

## **Suggestions and Plans to Minimize / Overcome Weaknesses and Threats**

- Additional staff be provided for UG, PG teaching and research.
- Agriculture graduates be encouraged to be an entrepreneurs and research workers.
- Strengthening of special cell of the students for JRF, SRF and ASRB examinations and studies abroad.
- Excess burden of work load of private colleges on the staff members of constituent colleges need to be reduced.



## **Suggestions and Plan to Maximize Strength and Exploit the Opportunities**

- Collaborative research projects with different national and International institutes.
- In- plant training to the students for entrepreneurship development in collaboration with private organizations and industries.
- Faculty up gradation on emerging technology to develop entrepreneurship in agribusiness.

### **Section 3: Outline of the strategy**

#### **Purpose of the strategy**

- To play the mandated role in maintaining food security in the long run.
- To adapt to new challenges and changing environment.
- To identify clear-cut objectives and goals and try to achieve them.
- To inform, educate and motivate college employees about university visions / goals.
- To address the problems of other line departments including farmers for sustainable agriculture growth.
- Development of quality human resource.

#### **Long term outcome goals**

- To carry out the mandated role in maintaining productivity of the state.

- To minimize post production losses, through value addition, shelf life enhancement and better storage facilities to increase farm income.
- To minimize losses due to pests and diseases in order to reduce greater instability in food production and providing livelihood security to farmers.
- To maintain and enhance human resources in the agricultural research system.

### **Proposed solutions and policy options**

- Industry linkage for summer placement and funding of research.
- Up- dating of courses, comprehensive and flexible curriculum
- Interaction between college and industry
- Increased use of e-governance in agril. education along with distant learning.
- Creating chair positions for National Professor, Eminent Scientist.
- International Collaborations.
- Emphasis on higher admission standards.
- Improve soil health.
- Protect, conserve and enhance germplasm.
- Encourage and enlarge protected cultivation.
- Increase investment in infrastructure and capacity building.
- Increase investment in post production management and value addition.
- More technology refinement and assessment centers.
- R & D in collaboration with private sector.

### **Prioritization**

- Human resource development and their utilization
- Production system management for enhancing production and productivity
- Breeding strategies for biotic and abiotic stresses.
- Soil health management
- Pest and disease forecasting and their management in context with climate change.
- Production of breeder and foundation seeds, planting material.
- Protected cultivation
- Organic production
- Post production management

- Strengthening of technology assessment and refinement
- National and International linkages

## **Section 4: Implementation plan**

The basic and strategic research will be carried out primarily by the different sections of the college through PG research and faculty. Location-specific problems will be addressed by the Institute. Efforts will be made to commercialize technologies for their large-scale application. Agricultural education will be strengthened by enhancing financial performance-specific grants, upgrading of curriculum & syllabi and faculty improvement. Refinement and assessment of technologies will be taken in the College Extension Development Block and Farmer-Scientist Forum. Timely weather-based agro-advisories will be issued to agro-based departments and the farmers. Land use plan and soil fertility maps prepared by PG students using GIS–GPS base will be provided to all the stakeholders.

The output of the faculty will be reviewed yearly and assessment of institutes through quarterly, six-monthly and annually.

## **Stakeholder engagement**

Through interaction with the State Government, farmers interface, members of farmer scientist forum, farmer rallies, regular interaction with the line departments and national and international institutes, more interactive user-friendly website, annual conference of KVKs, mobile advisory services, programmes in media.

## **Learning agenda**

The primary learning has gap in the feedback loop, from the stakeholders to college and specifically the gap in the lab-to-land transfer of technologies. Learning gaps in inter-disciplinary research.

## **Resources required**

There is strong need to develop talented students, scientists and enlightened farmers for better output. Though, the institute has reasonably good infrastructure for addressing research and development but to achieve faster growth rate there is a need to strengthen existing resources in terms of manpower, well equipped modern laboratories and sufficient budgetary provisions in recurring contingencies to manage them. There should be central instrumentation cell with all modern amenities to address research and development problems.

Trained human resource, sufficient budgetary provisions and modern infrastructure are the major resources. The strategic implementation protocol requires setting up and revamping the existing organizational set up, institutional change through appropriate incentives.

## **Section 5: Linkages**

The institute has well established linkage with sister institutions, state agricultural / veterinary universities, other research organizations like DST, DBT, NRC's, CIPHET Ludhiana, International Universities in Italy , USA, Sudan and Netherlands and public private partnerships with Jain irrigations systems, Mahindra and Mahindra Tractors, John deere tractors, Lamtek farm implements, Fruit growers associations in order to have strong research support to develop robust technology for sustainable development of agriculture sector.

- 1) Enhancement of agricultural research and higher education for addressing emerging issues
- 2) Strengthen frontier research for enhancing agricultural production and productivity
- 3) Development of technologies for improving soil health and water use efficiency, and farm machinery and agricultural processing
- 4) Commercialization of technologies and promoting public-private partnership
- 5) Enhance capacity for quality seed production
- 6) Genetic resource conservation and development and identification of new/ improved varieties/ hybrids
- 7) Production management, disease diagnostics/ management and value addition
- 8) Strengthening of higher agricultural education
- 9) Modernization of college farm
- 10) Strengthen extension activities of college.

### **Priorities among Key Objectives Target / Criteria Value**

<b>S. N.</b>	<b>OBJECTIVE</b>	<b>ACTIONS</b>
1	Strategic areas in education and research	<ul style="list-style-type: none"> <li>● Niche areas of Excellence</li> <li>● Modernization of college farm</li> <li>● Promoting holistic higher agricultural education</li> </ul>

		<ul style="list-style-type: none"> <li>● Building global competence</li> <li>● Improving faculty competence</li> <li>● Provision for visiting faculty</li> <li>● Linkages with National and International institutes for faculty and students</li> <li>● Accreditation and periodic revision of course curricula. <ul style="list-style-type: none"> <li>● Refresher courses for faculty</li> </ul> </li> </ul>
2	Strengthening frontier research for enhancing agricultural production and productivity	<ul style="list-style-type: none"> <li>● Breeding for biotic and abiotic stress</li> <li>● Low cost production technologies</li> </ul>
3	Improving soil health and water use efficiency, and farm machinery and agricultural processing	<ul style="list-style-type: none"> <li>● Development of technologies for natural resource management</li> <li>● Research on design, development and refinement of technologies</li> </ul>
4	Pest and disease management	<ul style="list-style-type: none"> <li>● Use of effective Bio control measures</li> </ul>
5	Value Added Products and Post Harvest Technology	<ul style="list-style-type: none"> <li>● Development of protocols for domestic and export market.</li> <li>● Process development for value added products.</li> </ul>
6	Enhancing productivity of crops	<ul style="list-style-type: none"> <li>● Production of breeder seeds</li> <li>● Production of planting materials of various crops</li> <li>● Development of improved varieties and technology interventions</li> </ul>
7	Commercialization of technologies developed and promoting public-private partnership	<ul style="list-style-type: none"> <li>● Product/Process development and commercialization</li> </ul>

8	Strengthening of extension system (ToT)	<ul style="list-style-type: none"><li>● Establishment of farmers training centre in college development block</li><li>● Starting ICT facilities in college development block for effective transfer of technology</li><li>● Establishment of Artificial Insemination and veterinary clinic in college development block</li></ul>
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