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International Maize and Wheat Improvement Center



# Agricultural Innovation Program (AIP) for Pakistan

## PRIORITY AREAS

### 1. ANIMAL SCIENCES

- Development of novel feed resources, feeding technologies and strategies for farm animals.
  - Improving techniques for conservation of farm animals genetic resources.
  - Improving Assisted Reproductive Techniques (ART) for enhancing productivity of farm animals.
  - Improvement in production practices of highland bovine and ovine species and documenting changes in transhumance production systems of small ruminants.
  - Genetic improvement for enhancing rural/ backyard poultry productivity.
  - Development of low cost animal housing and feeding management techniques for better output from native and exotic breeds.
- Diagnostic studies on feed-borne nutritional disorders in farm animals and poultry.
- Promoting 'one health concept' for prevention and control of zoonotic diseases.
- Patho-biology of Highly Pathogenic and Emerging Diseases (HPED) of livestock, and poultry.
- Improving techniques for enhancing the shelf life of fish.
- Brood stock development and quality seed production of fish.
- Fish productivity enhancement through improved feeding and management techniques.

### 2. CROP SCIENCES

- Combating emerging and re-emerging diseases and pests of the field and horticultural crops.
- Post harvest management of field and horticultural crops.
- Product processing, value addition and commercial innovation in horticultural and cereal crops.
- Indigenization of techniques and procedures for developing certified fruit plant nurseries through public-private partnership.
- Development of techniques and systems for vegetable seed production and high density plantation of fruit orchards.
- Development of agronomic techniques for different ecological zones to enhance crop productivity through resource conservation.
- Genetic resource development, production and processing techniques for medicinal and aromatic plants.

- Utilization of marginal/cultivable wasteland for orchards management through introduction of high value horticultural crops.
- Optimization of tissue culture techniques for seedlings production in horticultural crops.
- Development of high yielding hybrids of horticultural crops through modern and conventional techniques.
- Development of saline/drought resistant varieties of multi-cut fodder crops.
- Climate change impact assessment and its mitigation to enhance resilience of various cropping systems through genetic and agronomic management.
- Development and indigenization of cost effective and energy efficient farm machination technologies.
- Promotion of cropping system for high cropping intensity synchronized with agro-ecological conditions.
- Application of genomics, proteomics and metabolomics for crop improvement.
- Promotion of organics and new crops in various regions/cropping systems.
- Enhancing total factor productivity and sustainability of various production systems.
- Improvement in Gram and Pulses Crops.

### **3. SOCIAL SCIENCES**

- Impact of technology transfer and adoption of agriculture technologies
- Impact of climate change on agriculture
- Dynamics of comparative advantage and competitiveness of agriculture
- Agricultural diversification and implications
- Agricultural value chains analysis