

4.0 SWOT

Through sustained efforts during the last 10 years this university has been applauded for a significant and a far-reaching impact on agricultural education, research and extension. The University has several distinctive features in all the three programmes. The notable achievements in education have been substantiated by student's placement in private and public sector organizations of national and international repute. A comparison of the present with the early sixties gives us great satisfaction in terms of its all-round development and in the dynamic world we are well equipped to venture to take on the new responsibility of agricultural development in Northern parts of West Bengal. At this juncture it is essential to review and analyze our strengths, weaknesses, opportunities and threats so that we may herald a faster growth in the next 20 years and fulfill the aspirations and expectations of the people of Northern West Bengal.

Agriculture :

Strength:

- The setting of this University in a pollution-free environment representing the green belt of the Tarai region, where receptivity of farmers is very high, is itself an asset for the West Bengal state.
- With new research and extension responsibility the University has greater scope to initiate and coordinate research projects with other SAUs/institutions of ICAR and secure greater integration for effective technology generation and dissemination.
- Each faculty has got some highly specialized, well-developed and equipped departments. These departments may further be upgraded as Centre of excellence upon the need and scope of their development.
- Our major strength comes through highly qualified and experienced scientists, well equipped research centres and laboratory facilities for basic and applied research and higher education in agriculture, horticulture and technology.
- The courses and curricula of the undergraduate and post-graduate programmes in different faculties and dynamic approach for needful revision as and when required provides a solid background for all-round development of the students.

Weaknesses:

- Our graduates are inclined towards job searching in spite of opportunities to earn equal

or more through self-employment.

- It is felt that we have not made a desired progress in basic and strategic research which is essential for advancement of science except a few areas.
- There is also a lack of appropriate priority setting at the University level which may cause duplicity in research and infrastructure development.
- The University is poised for development of agriculture and related industry in conformity with the norms and standards set by WTO which is not possible in such poor scientific staff strength at present.
- Lack of due attention towards socio-economic and policy research.
- The institutional linkage to strengthen human resource development, collaborative research, staff training and management issues is not sufficient to meet the challenges as emerged in post WTO era.
- Poor linkage among research scientists, extension personnel and farmers results in slow pace of technology transfer.
- Poor resources for diagnostic surveys has been one of the shortcomings in our research efforts.
- Lack of strong linkage with the line departments of the state and other universities has also resulted in the multiplicity of isolated research efforts and the lack of synergy.
- Despite development of production technologies, greater receptivity for modernization of agriculture among farmers and high investment, the profit from agriculture and allied sectors is not secured due to frequent and uncontrollable natural disasters and poor market structure.
- Most of the costly equipments procured in the past are either backdated or have gone out of order which need substitution or repair.
- Researches in the University have been paying much attention towards increasing productivity where the aspects of quality improvement are lagging behind.
- The northern part of West Bengal State has predominance of subsistence agriculture and much has not been achieved / done on the research front for small and marginal farmers as also for rainfed agriculture.

Opportunities:

- With the globalization of markets, there are ample opportunities for high demand of new products. Similarly there are a growing demands for highly trained manpower in specialized subjects.

- There is already a growing awareness about the hazards the Indian agriculture is likely to face in the next century on account of stagnation in yield, unabated growing pollution, continuous use of chemicals and pesticides with harmful residues, depleting resources and many other adversities. The scientists have to prepare themselves to overcome these problems and new challenges need to be faced in the twenty-first century through new research strategies and action plans.
- The agricultural technology information is another potential area which can be catered / disseminated effectively through computer and internet services.
- In post WTO era in the realm of globalization of agriculture, the University teachers and scientists have many new challenging areas of research to prove their competency and skill.
- The vast area of waste land as developing continuously due to frequent change of course of rivers. This provides an opportunity to the scientists to work for generating employment opportunities, needs to be reclaimed in an integrated manner and utilize them through developing crop-forestry model.
- The cropping intensity in irrigated as well as rainfed areas is very low which can be doubled through developing micro-irrigation in Terai Zone along with large scale adoption of technologies of conservation agriculture for sustainable food and nutritional security and maintaining balance in resources.
- Due to globalization of agriculture new areas have emerged for production, processing and services sector. The progress and growth demands for future research in these areas.
- The diversification of agriculture will provide plenty of opportunities to the scientists, farmers and industries to move towards prosperity and self-employment in the agricultural sector.
- New areas in every field, be it agriculture, horticulture, technology and other disciplines will be emerging to be tackled through long-term research in soil and water management, biotechnology, energy management, marketing, processing related to crops, fruits etc. which require continuous research.

Threats:

- Due to ever increasing population, growing urbanization, pollution of air and water and excessive industrial effluents the Indian Agriculture is likely to be adversely affected in the 21st century. Hence, it would be necessary to create new disciplines and assign many new areas of research to solve the aforesaid problems for which the University

scientists will face many challenges and constraints.

- Laboratories and infrastructures at the outreach research stations and sub-stations are not equipped to take up research programmes in newly emerged. Hence, it requires sufficient fund for modernization of laboratories and developing infrastructure and hard work. In the absence of the requisite facilities the scientists will have to work in cooperation with farmers for testing and verification of technologies developed by them.
- With the dominance of the industrial sector and a handful of influential there is a continuous threat to agriculture being affected with effluents and pollutants which will prove hazardous to crops, trees, and human health.
- For commercialization of agriculture huge investment is required which is beyond the reach of the farmers residing in their area.

Horticulture :

Strength:

- The entire region is blessed with natural potentiality of becoming a horticultural business hub. A wide range of horticultural crops are being grown with huge success even though traditional cultivation practice is in vogue in most cases.
- The region enjoys most kind of land situation, soil type, agro-climatic situations.
- Declaration of Agri-export zone for Mango, pineapple and litchi
- Abundance of cheap Agricultural labour.
- Average productivity of fruit crops during 2007-08 (13.376 tonnes/ha) is higher than national average (11.2 tonnes/ha).
- West Bengal ranks first in vegetable production and this region accounts for 28.34% of state vegetable production whereas it share only 25.15% of state's geographical area.
- Productivity of pineapple is highest in the country and productivity of mango and litchi is higher than national productivity.
- Productivity of tomato, cabbage, cauliflower, brinjal is higher than national productivity
- Excellent potential for production of high value cut flowers like dendrobium/cymbidium orchids, liliiums, gladiolus, anthurium in the Darjeeling hills, gerbera and rose in hills as well as plains under low cost green houses.

Weakness:

- Eighty eight percent (88 %) of the total land holdings belong to marginal and small farmers with average holding size is 0.82 ha, limiting the scope for introduction of technology innovations and interventions.
- Though the region is a major producer of fruits and vegetables however inadequate post harvest handling and cold chain facilities for perishable horticulture produce including potato is resulting in poor market price due to seasonal gluts and distress sales besides huge losses.
- Except a few small scale, unorganized mango, litchi and mandarin orange nurseries, there are no commercial fruit nurseries in North Bengal. Planting materials procured, in most cases, are not genuine. As the planting materials are procured from either South Bengal or other states, the cost involvement is much higher.
- Growing traditional varieties is a serious weakness in this region. In Malda district, 38% of the area under mango is occupied by Fajli which does not have any export value. Again in Malda district, 54% of litchi area is occupied by Gooti (local) varieties. Therefore, to promote export, it is very essential to replace with varieties having export potential.
- In most orchards, the practice of canopy management is absent. Trees with huge branches hardly allow any light to enter the entire canopy volume. Apart from this, the orchards with very old plantation again are very low productive.
- The concept of high density orcharding is completely absent among growers of North Bengal. It seriously hampers the productivity and profitability of commercial orcharding. In case of pineapple, farmers prefer to produce large fruits following low planting density. But, the industries are demanding small size fruits which can be attainable by high density planting.
- North Bengal soil being acidic in nature is deficient in many of the micronutrients which results in some serious physiological disorder in fruit crops.
- Farmers are not aware about the quality that is desired by the market. Specific agro-techniques to attain and maintain that quality is beyond the reach of the growers.
- Farmers of North Bengal being very traditional are reluctant to adopt new crop which results in huge market glut leading to low return. Horticultural crops being seasonal, it becomes very important to supply different fruit throughout the year so that the factory doesn't remain idle. Intelligent crop diversification can increase profitability of

horticulture business by many folds.

- *Unscrupulous business attitude of traders*- Traders often get over enthusiastic by the high price of early crop and forced farmer to harvest their crop before it attained proper physiological maturity. This results in poor edible quality of crops leading to bad reputation of growers.
- Economic condition of farmers of this region is very poor. Initial investment for establishing a fruit orchard is very high and because of this small and marginal farmers are reluctant to grow fruit.
- Most often farmers are get frustrated by uncertainty over market.
- Despite the existence of three Agri-export zones in North Bengal, the export of fruit crops from this region remains to be major concern. Since 2002-03, total export of fruit crops from this region is around Rs.77.5 crore which needs immediate attention.
- Investment level in horticulture business is very low which desperately needed to be raised many fold.

Opportunity:

- With the declaration of Agri-export zones for pineapple, mango and litchi, the horticultural activities in this zone have surely gained some momentum which is realized by 18.5% and 31.5% increase in the area under pineapple and litchi respectively during 2005-06 over 2003-04. However, increment of area under mango was only 1.95%.
- Establishment of a few fruit processing industries in the area has definitely given a boost to the pineapple grower. However, problem still lies with the quality and quantity of production. At least six time more pineapple production is needed to meet their requirement. Therefore, a huge scope still remains for expansion of area under pineapple. Likewise, more areas are likely to come under different fruit crops to match the pace of development that is expected to arise from the multidimensional activity under these Agri-export zones.
- An increased popularity for banana cultivation is noticed among farmers of North Bengal which is reflected in steady increase in area under this crop. Martaman is the most popular variety of North Bengal. Improved varieties like Giant Governor and some new introductions like Kunnan, Karpoorvalli, Lalkela are found promising.
- Jackfruit and citrus have great potential but they continue to be recognized as underutilized crop in this region. Screening of available jackfruit and citrus germplasms and standardization of agro-techniques may add value to these crops.

- Arecanut is grown widely here and these plantations can be utilized to creep black pepper which holds a good promise in this region. Black cumin, garlic, turmeric, ginger, large cardamom are the other spices which have good scope in this region.
- Other fruit crops that are found to be promising in this region are papaya, guava, passion fruit, strawberry and kiwifruit etc. Introduction of these crops definitely will improve crop diversification level.
- Development of commercial nursery and supply of genuine seed material of vegetables crops may become good horti-business venture in this region. Augmenting seed production through promotion of seed villages for production of certified seed with centralized processing/quality control facilities at block /district level.
- Good scope for improving cropping intensity with better exploitation and management of surface and ground water resources; crop diversification with less water intensive and remunerative crops like vegetables.
- Better organic input supply through development of ‘Organic Inputs Production Hubs’, promotion of FYM and vermicomposting at farmers’ fields. These activities will utilize the huge amount of crop residue, forest litter, water hyacinth, road side weeds.
- Wide opportunities for export of horticulture produce especially orchids, cut flowers, tropical and exotic vegetables, mango, pineapple, litchi, potato in fresh and processed forms.
- Keeping in view the small holding nature where individual ownership of farm equipment and farm mechanization is not a feasible and viable proposition, therefore the concept of “*Farm Machinery Hub*” has wide opportunities in the region.
- Identifying potential zones for establishing multipurpose cold storage facilities and food processing units either through private sector investment or PPP mode with government providing basic infrastructure.
- Awareness creation among farmers and processors on quality aspects and requirements with respect to Sanitary & Phyto-sanitary measures (SPS), CODEX, HACCP and modernization of existing processing units.

Threat:

- Prevalence of some deadly problem like leaf curl virus of tomato, bacterial wilt and shoot & fruit borer of brinjal, anthracnose of mango, dieback in orange, pericarp browning in litchi etc. Occurrence of natural calamities like floods, land erosion and consequent production, transport and storage losses.

- Indiscriminate exploitation of ground water may lead to several blocks falling under overexploited category limiting the scope for further development of irrigation facilities
- Lesser share of certified seed and use of poor quality seed may affect crop productivity and overall production.
- Smaller land holdings limiting the scope for adoption of intensive crop production technologies, which are capital intensive
- Excessive use of chemical fertilizers & pesticides limiting the scope for adherence to quality standards with special reference to exports.
- Changes in socio-economic conditions, with younger generation from farming community preferring urban employment in place of agriculture.