

Coconut cultivation in West Bengal: Challenges and extension approaches to step up production

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Coconut (*Cocos nucifera* L.) belongs to the palm tree family Arecaceae. Coconut cultivation is inseparably engrafted in India's socio-historical culture as well as the traditional identity. It plays an important role in contributing to India's Gross Domestic Product (GDP) as an important source of edible oil and an agro-based raw material for multifarious industries. It is a source of food, beverage, medicine, natural fibre, fuel, wood and raw material for producing a variety of goods. Considering the versatile nature of the plant and the multi-use of its products, the coconut palm is eulogized as KalpaVriksha (Tree of Heaven).

As per 2018-2019 statistics of the Coconut Development Board (CDB) under Ministry of Agriculture and Farmers Welfare, Government of India, 91% of the total coconut production falls within four southern states: Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. Other states, such as West Bengal, Odisha, Maharashtra, Gujrat, Goa and those in the Northeast (Tripura and Assam) account for the remaining production. West Bengal has good agro-climatic and edaphological conditions along with its coastal line that offers good potential for coconut cultivation.

West Bengal ranks 5th place in production (384.14 million nuts) and the 2nd position in productivity (12,464 nuts/ha) in India. Major coconut producing districts of West Bengal are Murshidabad, South 24 Parganas, North 24 Parganas, East Midnapore, Howrah, Purba Bardhaman, West Midnapore, Coochbehar, Nadia, Hooghly etc.

Challenges:

In West Bengal, coconut plantation sector is confronted with a number of challenges that is resulting into abating yield. This downfall, if unchecked and poorly managed, can have unforeseen and adverse consequences on the productivity and sustainability of coconut cultivation in the state.

Majority of coconut farmers in the state have only small holdings and are considered resource-poor. Besides, coconut palms in common homestead are generally very few in number and are also found to be senile.

The coconut plants are confined to ecologically vulnerable scattered regions like eroded embankment of ponds and puddles, under shady trees, water logged areas, wastelands etc. This poses a limiting factor for its limited yield potential.

Imminent climate change is triggering deficit in rainfall, cyclones and as well as engenders to invasive pests in West Bengal. Whitefly infestation is also causing widespread damage to coconut palms. Stem bleeding, bud rot disease, insects like eriophyid mite, red palm weevil and rhinoceros beetle are also devitalizing the plantations.

Recommended package of practices in coconut cultivation in terms of spacing, method of planting, crown cleaning, nutrient, pest and water management are not properly practised by the farmers. Therefore, the production potential remains unexploited.

The SWOT analysis of coconut cultivation in West Bengal.			
Strength	Weakness	Opportunity	Threat
• Arable land	• Fragmented land	• Improved varieties	• Climate change
• Agro-climate	• Low technological adaptation	• Value addition and by product utilization	• Injudicious resource use
• Soil conditions	• Inaccessibility of quality planting materials	• Export earnings	• Labour crisis
• Water resources	• Pest problem	• Coconut based cropping systems	• Middle men
• Indigenous varieties	• Poor entrepreneurship	• Mechanization	• Price fluctuations
• Human resource	• Lack of awareness and information	• Palm insurance	• Marginal farmers
• Productivity		• Untapped potential in coastal belt	
• Market demand			
• Research and extension system			

The dearth and high labour wages in the state adversely affects the crop establishment, management and harvesting as well as the earnings obtained from coconut cultivation.

Middlemen are the ‘bulk farm gate buyers’ who purchase the produce at almost giveaway pennies and sell at larger prices to the consumers. As a result, coconut farmers hardly get any fair price.

Inaccessibility of quality planting materials of improved high yielding varieties suitable for different agro-climatic conditions of West Bengal is another major issue faced by the farmers.

Coconut plantations are solely dedicated for tender nut purpose in the state. Major portion of the nuts are harvested at tender stage and consumed for domestic purpose. Consequently, only a meagre portion is absorbed by the industries for further value addition.

Insufficiency of proper training and guidance on coconut based small industries or processing units is perceived by many inquisitive local entrepreneurs.

SWOT analysis

To overcome these challenges, there is a necessity of ‘Strength-Weakness-Opportunity-Threats (SWOT)’ analysis of coconut cultivation in West Bengal so that the inherent weaknesses can be converted into opportunities and present threats can be vanquished with its strengths.

The table given above indicates the strength, the weakness, the opportunity and threats respectively. It clearly shows that more attention is needed to overcome the challenges faced by coconut sector.

Mitigation strategies

In the long run, our vision is to achieve a fully developed and globally competitive coconut industry to meet the ever growing demand under a changing climate and dwindling natural resources. To mitigate the climate change threats, there is a need to promote environment friendly technologies during the entire chain from production to consumption. The challenges should be tackled in a systematic and holistic way by conserving natural resources as well as prioritizing the need of stakeholders. The key strategies for obtaining a sustainable and vibrant plantation sector in West Bengal are:

- Enhancing the yield with a sustainable package of practices.
- To access quality, disease-free planting materials and the right agricultural inputs.
- Utilizing natural resources judiciously.
- Attaining value addition and effective market access and to reform developmental and policy issues feasibly.

CDB's extension approaches

The Coconut Development Board (CDB) provides services facilitating the coconut farmers to acquire various material and non-material inputs for their farm activities and enterprise development. There are three broad groups of offerings to coconut farming community under extension activities, which are Technical knowledge, Social skills, Input materials, subsidies etc.

CDB, State Centre, Kolkata is supporting Bengal's farmers who are engaged in coconut cultivation through several schemes like Area Expansion Programme (AEP), Production and Distribution of Planting Materials, Integrated Farming for Productivity Improvement etc. It also imparts technologies, social skills and disseminates information through several trainings, workshops, publications and demonstrations organized at different parts of the state. The extension activities conducted by the State Centre, Kolkata is furnished below.



Farmers Field Day

Farmers Field Day programmes on selected technologies used in coconut cultivation are organized to educate farmers about the different methods of planting, Integrated Nutrient Management (INM), Integrated Pest Management (IPM) and Integrated Disease Management (IDM). Such programmes not only convince the farmers about the viability of the technologies, but also help them in adopting the recommended technologies. Thus proper feedbacks and Indigenous Technical Knowledge (ITK) are also obtained from the farmers which are useful for the Board for further improvisation of the technologies.

In the financial year 2019-20, State Centre, Kolkata has conducted several such programmes to impart technical know-how on coconut farming in various blocks of South 24 Parganas, Howrah, East

Midnapore and Nadia District of West Bengal. One of those programmes was conducted at an experimental site of Bidhan Chandra Krishi Viswavidyalaya (BCKV), the State Agricultural University (SAU) of West Bengal where demonstration of the uses and effects of organic pesticides like neem oil, plant extracts on invasive white fly infestation was carried out for the farmers along with other pest control measures.



Workshops and seminars

Workshops and seminars at State-level, District-level as well as at Block-level are conducted by the Board. The main objective of such workshops and seminars is to propagate knowledge and skill on scientific coconut cultivation to the officials, extension workers and farming community.

In the year 2019-20, State Centre organized three block-level and two district-level programmes at North 24 Parganas, South 24 Parganas, Jalpaiguri and East Midnapore district. The district-level seminar in Jalpaiguri took place at the ICAR-CPCRI Research Centre, Mohitnagar. In the seminar, farmers were given awareness on various schemes, procedures and advantages of forming the Coconut Producers' Societies (CPS).

Exhibitions

The CDB showcase everything about coconut products and by-products at agricultural fairs and exhibitions for the marketing and promotion of coconut value added products. The Board provides first-hand information to the farmers and general public about the multifaceted uses of coconut. Such exhibitions bring industries, farmers, growers, exporters, technologists, processors, investors and policy agencies together to a common platform.

The CDB State Centre, Kolkata participated in

three such exhibitions during the last financial year. More than 2000 people from nearby districts visited the programme.



State Centre displayed several value added coconut products such as tender coconut water, vinegar, coconut milk powder, coconut cream, desiccated coconut, virgin coconut oil, Neera, Neera sugar, Neera jaggery, coconut biscuits, coconut chips, handicrafts made of coconut coir / shell / wood etc. Well informative posters, banners, leaflets, booklets about scientific coconut cultivation and value addition were also distributed to the interested farmers during the occasion.

Handicrafts training

Coconut shell has always been used for producing handicraft items, as a cooking fuel and to make small multi-utility bowls or serving spoons with simple bamboo joinery. However, in course of time and the improvement in tools, people started making various decorative articles by cutting coconut shell or by carving coconut wood. Extension framework for using participatory group approaches and targeted programmes for youth and women entrepreneurs are strengthened through this kind of training programmes. Cash prize for the winners and certificates to the participants are also awarded by the Board for the recognition of their hard work during the training period.



In February, 2020, State Centre organized a six day handicrafts training programme on basic coconut shell cutting at the Sasya Shyamala Krishi Vigyan Kendra, South 24 Parganas District for 15 youths from rural areas to create livelihood opportunities for them.

World Coconut Day

Every year September 2nd is celebrated as World Coconut Day to commemorate the foundation day of the Asian Pacific Coconut Community (APCC). The APCC is an intergovernmental organization mandated to promote, coordinate and harmonize coconut developmental activities in the Asian Pacific region. In India, World Coconut Day is celebrated under the aegis of CDB in various coconut growing states across the country.

In 2019, CDB conducted the World Coconut Day on the theme “Coconut for Family Wellness” at Bhubaneswar, Odisha.

Friends of Coconut Tree (FoCT)

FoCT is a programme for empowering youth groups with special emphasis on skill upgradation and improving work efficiency in coconut farming. The objective of the programme is to impart training to a group of unemployed men and women in developing technical skills, entrepreneurship capacity and communication skills to address the needs of the coconut growers as well as to tackle the problem of unavailability of coconut tree climbers for farming and plant protection activities.

During the past few years, this State Centre has conducted the FoCT programmes at several training institutes. Training is given on tree climbing, crown clearing, harvesting, pest control operations, pollination and hybridisation techniques, identification of tender, mature and seed coconuts. 3,989 unemployed youths from different districts of West Bengal have been trained till date under this skill development programme .



Dr. Jelfina C. Alouw assumes charge as ED of ICC

Dr. Jelfina C. Alouw assumes charge over as Executive Director of the International Coconut Community, Jakarta, Indonesia. Prior to this appointment she was working as head of Collaboration and Dissemination Division of the Indonesian Division for Estate Crops Research and Development, Indonesia. She is an Entomologist by profession and with her 27 years of experience in the field of agriculture development, she is frequently providing technical assistance and consultancy for coconut development to farmers, coconut industries, students, lecturers and other governmental organizations. She is the author of many informative articles on coconut which were published in renowned international journals.



FPO meetings

The main objective of the programme is to create a platform for reviewing involvement of Farmer Producers Organization (FPO) or Coconut Producers' Societies (CPS) in implementation of Board's schemes and preparation of roadmap for future activities in coconut cultivation, processing and marketing.

Exposure visits

Field visit and hands-on experience at research farms or processing units are very important for upgradation of technical knowledge of the farmers. In any field-based work, seeing is believing. Therefore, to justify it, there is a provision for the inquisitive



the farmers regarding coconut cultivation. Activities such as distribution of pamphlets and booklets play an important role for information dissemination. Newspapers are being used to advertise different schemes and programmes. Articles in the journals communicate the research findings and innovative ideas in coconut cultivation. All India Radio (AIR) and social media are also regularly taken up as effective tools for community mobilization in coconut cultivation.



farmers to go on exposure visits. Such visits can get them acquainted with the innovations and progresses that have been made in coconut farming through scientific research and technologies.

Mass Media and Social Media

Mass Media as well as social media can be very effectively used to increase the awareness among

Conclusion

Though large number of technologies has been generated for the improvement of coconut at various research institutes, it has not yet reached to the beneficiaries to the desired level. CDB is extending its outreach across West Bengal through the State Centre, Kolkata with various extension approaches. Farmers have to make use of the opportunity and put to use for making a boost in earnings from coconut cultivation. It is, therefore, anticipated that every coconut farmer of the state can harness the benefits of various assistance from CDB to increase the production of coconut in West Bengal in the near future. ■