

Introduction

Rubber cultivation is an agro-based profitable industry. Importance of rubber in everyday affairs of human life as well as in case of flourishing modern civilization. Rubber cultivation is nature, climate and environment friendly. Socio-economic importance of this agro-produce is vast. Rubber cultivation is of greater importance than any other tree cultivation among total forest resources. People around the globe are producing 46,000 types of products along with toys by using Rubber. These products are exported to different countries of the world. Cores of foreign currencies are being earned by this way. Role of rubber cultivation is notable to maintain the mobility of national economy. It can create an ample opportunity in the field of employment of rural people of Bangladesh. A large number of employments are created by producing Rubber making usable as raw material for industrial sector and marketing it after processing. Rubber is one of the most income generating crops of Bangladesh.

Cores of taka could be earned by processing rubber and making valuable furniture. Not only rubber but its tree also able to create economic opportunity for Bangladesh. There is a projection; five million people of Bangladesh will be employed through rubber industries within coming ten years. Forest, fruit and medicinal trees can be planted along with rubber trees to make rubber cultivation actually profitable. Other than this, poultry and dairy farms could be established in the suitable places of Rubber garden. Moreover, fish culture can be started in the water reservoir or hill down by the side of Rubber garden.

What is highly mentionable, contribution of Rubber tree is much more important than any other tree in preservation of environment. To mitigate global warning and maintain ecological balance, rubber tree plays a vital role because it produces more oxygen and emits more carbon than other trees. A research study has shown that, each hector of rubber garden (where number of productive rubber trees are 415) emit 39.02 tons of carbon annually from the stratosphere, which plays an important role to minimize the environmental warming and to protect the environment. So, rubber cultivation is a great factor in economic development of country. Simultaneously, it is contributing enormously in case of the protection of nature and environment. So, commercial cultivation of rubber is a time-demanding factor at present.

Evolution of Rubber Cultivation

Rubber tree is a member of “euphorbiaceous” family of plant kingdom and known as “*havea brasiliensis*”. It has originated from the Amazon valley of South America. Christopher Columbus is considered as the first discoverer of Rubber tree. It is known that, he brought some rubber balls which were made of adhesive of one land of tree after his second expedition on 1496. The people of ‘Haiti’ used this above- mentioned ball for playing purpose. During 1873-1875, an enthusiastic group of British people brought some rubber seeds at the ‘Que Garden’ of London from its original habitat, Brazil and panted these seeds experimentally. Afterwards 2000 sapling where sent to SriLanka. Than sapling were sent to Malaysia, Japan, Singapore, India and other

countries. Rubber cultivation flourished in the east from these saplings. Mr. H.N. Ridley, Director of Singapore Botanical Garden invented the method of collecting Rubber secretion from Rubber tree.

History Of Rubber Cultivation in Bangladesh

In 1910, some saplings were sent to 'Baromasia' tea garden of Chattogram and 'Amu' tea garden of Sylhet from Calcutta Botanical Garden. Forest department planted some rubber trees in 'Modhupur' of Tangail, 'Hajarikheel' of Chattogram and 'Tetulia' of Panchogarh in 1952. In 1959, United Nation's specialist of Food and Agriculture Organization (FAO); Mr. Loyed recommended commercial cultivation of rubber in country, after a feasibility study. A pilot project of 710 acres in the hilly districts of Chattogram and sylhet were taken through government sponsorship in 1960-1961. Rubber cultivation in Bangladesh has started its journey under this project, by cultivating total 40 acres of Rubber garden of which 30 acres in 'Ramu' and 10 acres in 'Raojan'. This project was handed over to Bangladesh Forest Industry Development Corporation (BFIDC) with a view to expand Rubber cultivation in 1962. Total 18 garden were created afterwards consisting 9 in Chattogram, 4 in Sylhet and 5 in Tangail. Other than this, there were garden under the ownership of Hill Track Development Board, private ownership and in the area of national and multinational tea garden. A diagram of land and production volume of Rubber cultivation in Bangladesh as per collected Data:

Sl. no	Name of Organization	Volume of garden (Acre)	Volume of production (Metric ton)
01	BFIDC	38067.01	5522.20
02	Private Ownership	13918.57	772.49
03	Hill Tracks Development Board	1200.00	1150.00
04	Duncan Brothers	7500.00	850.00
05	James Finlay	5000.00	550.00
06	Ms. Ragib Ali	2500.00	430.00
07	Ispahani Neptune	800.00	80.00
Total		98417.01	11282.20

At a glance Bangladesh Rubber Board

Vision:

To establish a self-dependent sustainable rubber industry and development of environment.

Mission:

- To ensure improved quality Rubber cultivation through modern technique.
- To increase Rubber production by appropriate use of leased land.
- To solve existing problems in Rubber cultivation and Rubber industry.
- To contribute in national economy through exporting Rubber in foreign countries.
- To alleviate poverty by engaging poor community in Rubber cultivation.
- To remove unemployment through Rubber cultivation.
- To ensure female participation in the field of Rubber cultivation and Rubber industry.

Functions of Bangladesh Rubber Board

- To formulate policies and plan related to Rubber cultivation and industry and provide suggestions, recommendations, assistance to the government to implement these.
- To provide scientific, technological, technical and economic assistance to the individual entrepreneurs of Rubber cultivation and industry.
- To identify the suitable lands for Rubber cultivation through the help of related ministries and departments.
- Selections of eligible person/organization interested in Rubber cultivation and recommend the government to provide lease/allotment in favor of them.
- To provide necessary recommendations to the government to take necessary legal actions against the lease or allotted for breaching of contract.
- To motivate land owners and allottees to create Rubber garden.
- To provide necessary assistance to the owners and allottees to get loan and insurance facilities.
- To give scientific, technical and financial support to the owners/allottees.
- To extend necessary support for marketing and exporting the produced Rubber.
- To provide technological and financial help for producing fruits, forest and medicinal trees along with other cash crops in non-suitable portion for Rubber cultivation.(on 35° slope or water stagnant area)
- To take action to train up the owners, laborer and staffs of the Rubber gardens.
- To assist in conducting training programs and rehabilitation of the workers and laborer related to Rubber garden and industry.
- To assist in research activities on Rubber cultivation and industry.
- To take initiative to establish a Rubber research institute with a view to develop Rubber cultivation and industry.
- To create database and keep it up to date regarding Rubber cultivation and industry.
- To provide suggestion to the government to discourage the production, importing, marketing and use of harmful artificial Rubber product.
- To observe and monitor overall advancement of Rubber cultivation and industry.

Constitution of Board of Directors

Bangladesh Rubber Board comprises of following members:

- A Chairman, fixed by the Government of additional secretary status,
- Additional divisional commissioner (revenue) of all division,
- Deputy secretary of Ministry of Environment Forest and Climate Change,
- Deputy Secretary of Ministry of Land,
- Deputy Secretary, Finance Division, Ministry of Finance
- Conservator of Forest, Department Of Forest
- Director, BFIDC
- Representative-Chattagram Hill tract Development Board
- Representative- Hill Tract Regional Council/ Jila parishd
- President/ Representative Association of Bangladesh Rubber Garden Owners
- President/ Representative Association of Bangladesh Rubber Industry Owners

- An owner of Tea Garden producing Rubber

Act, Policy and Rules regarding Bangladesh Rubber Board

- a) Bangladesh Rubber Board Act, 2013
- b) Bangladesh Rubber Board Policy, 2010
- c) Bangladesh Rubber Board Working (service) Rules-2020

Achievement of Bangladesh Rubber Board (BRB)

Bangladesh has accepted membership of Association of National Rubber Producing Countries (ANPRC) in October, 2017 to achieve sustainable development of national Rubber Industry in Bangladesh with other Rubber producing Countries. Moreover, Bangladesh Rubber Board has joined **International Rubber Research and Development Board (IRRDB)** as member.

Bangladesh Rubber Board has taken an initiative to import hybrid

Rubber clone from India and Sri Lanka under Memorandum of Understanding (MOU) signed within the member state of IRRDB. It is expected that natural Rubber production will be increased in Bangladesh if the soil and climate is proved suitable for the clones. But it will take a time period of 8-10 years. Import permit is taken from related development to import Rubber Clone and continuous communication is going on with India and Sri Lanka to import hybrid clones. There are about 11lac acres of Rubber garden in Bangladesh at present. Bangladesh Rubber Board is trying its best to solve the existing problems in those gardens. Other than this, Bangladesh Rubber is working hard to modernize the production technique of Rubber. As a result raw Rubber production will be increased in present situation. Bangladesh Rubber Board is committed to flourish environment friendly Rubber industry.

Limitations

Bangladesh Rubber Board is committed its duties assigned by the Govt. it is facing some challenges in course of achieving its goal and performing the duties.

- Insufficient Human Resources
- Absence of own land, Building or infrastructure

- Lack of necessary information-data regarding Rubber production & its uses
- Insufficiency of required places for everyday activities & Research
- Lack of Human Development opportunity
- Absence of research lab & modern equipment
- Lack of incentives to help the marginal and small farmers

- Less tax is imposed on imported Rubber from abroad.

Ways to overcome

- Increasing organizational capacity

Bangladesh Rubber Board has to appoint required officer- staff- workers according to the approved organogram without any delays so that everyday affairs will become dynamic. Other than this, BRB should have own land, own garden and research lab for the experimentation of natural Rubber and thus the door of effective research & training will be opened.

- Collecting information & data related to Rubber industry There is no Database in Bangladesh of actual information regarding cultivation, production, uses, import and export of Rubber. Bangladesh Rubber Board has recently taken an initiative to create a comprehensive Database regarding natural Rubber. Bangladesh Rubber Board has communicated with local Govt. & Rubber garden owners already. The process of formulating Database is going on.

Increase of multinational cooperation:

Bangladesh has already received membership of international organizations, namely ANRPC and IRRDB. As a result, cooperation and coordination with Bangladesh and member states will be expanded. It will help to formulate policies of international standard and implement this. Moreover, production of natural Rubber could be increased in Bangladesh by searching, collecting and cultivating of hybrid Rubber species.

Increased Production of Natural Rubber:

Bangladesh Rubber Board has planned to increase the production of natural Rubber. If the country could be self-dependent in production of natural Rubber, it will be able to fulfill local demand as well as earn foreign currency by exporting Rubber.

Wildlife conservation & safety measures:

Bangladesh Govt. has taken a number of initiative as a part of implementing the wildlife (conservation & safety) Act, 2012. A safe haven is declared for wild elephants in the district of Bangladesh. But due to food scarcity, the elephants are frequently visiting local habitat and destroying Rubber garden and other crop fields. Bangladesh Rubber Board has taken a plan to determine the course of action with the coordination of forest department to overcome this crisis.

Current activities of Bangladesh Rubber Board

- To collect relevant information of all the Rubber gardens in Bangladesh.

- To obtain information regarding production, marketing, exporting, & Rubber based industry set up and take further actions.
- To collect all information's of leased land and taking next course of action.
- Formulation of Database
- Conduct training for garden owners and manager of Rubber garden.
- To arrange dialogue meeting with district commissioners (DC) and stakeholders of related districts.
- To arrange meetings/seminar to publicity Rubber cultivation and Rubber industry.
- To arrange regular in house training.

SWOT

- Receiving Government Land
- Soil of Bangladesh is suitable for Rubber cultivation Formulation Bangladesh Rubber Board, ACT.2013 Formulation of Rubber Board.

Weakness:

- Utilization of leased land/non-cultivation of Rubber.
- Illegally occupy leased land.
- Tendency to hide information by the rubber garden owners.
- Illegal handover of leased land
- Lack of proper supervision and monitoring.

Opportunity:

- Rubber cultivation is environment friendly
- Rubber cultivation can play a vital role to combat risks of climate change.
- Rubber cultivation is playing an effective role to attain the SDG's
- Rubber cultivation is helping in poverty alleviation
- Vast opportunity of employment in rubber cultivation and industry.
- Rubber cultivation & Rubber industry playing an important role in women empowerment.

Threat:

- Draught, Flood, Cyclone, Land slide etc. due to climate change.
- Destruction of rubber garden by the attack of with elephant.
- threat of catching fire in the garden
- destruction of raw materials due to transportation crisis
- illegal collection of money on the road and within the garden

Future actions of Bangladesh Rubber Board

- to acquire own land and to construct own building/infrastructure.
- to shift Bangladesh Rubber Board office at own building
- To establish own garden, factory and laboratory
- To set up own training center

- To train up the garden owner, manager, laborers, tappers on quality rubber cultivation by modern method.
- To take initiative to obtain and use high quality clones to increase the production of rubber and become self-dependent.
- To improve the quality of rubber as well as increase production
- To ensure the best utilization of domestic rubber production
- To take steps to impose tax on imported rubber.
- To make effective communication with related persons with a view to solve existing.

Problems in Rubber Cultivation

- to stop import of synthetic rubber
- to ensure waste management in the rubber factories
- to make arrangement for satisfactory with rubber garden owners & rubber based industry.
- to ensure credit facilities for garden owners.
- to take initiative to increase overall production of rubber through public private partnership.

Bangladesh rubber board has started its journey with independent entity only two years ago. It is advancing forward though don't have any own office building; manpower is yet to be appointed, with firm determination. Rubber is an agro based cash crop and rubber industry is a very promising sector. A large number of populations in Bangladesh is engaged in rubber cultivation and industry, poverty alleviation, employment creation. Improving financial capacity of the businessmen, women empowerment, above all environment friendly atmosphere can be ensured if this sector can prosper Bangladesh is emerging tiger of Asia at present.

It is now on the way to irresistible advancement. World economic forum awarded Bangladesh in this way. A bright shining light is waiting for Bangladesh After five decades of our great liberation war. Bangladesh is topping amongst successful countries who has acquired more growth in GDP. In case of foreign reserve, Bangladesh's position is second highest. Bangladesh is also second largest readymade garments exporter of the world. It has gained ample praise in the field of ceramics & medicine industry in the world. Position of paper mills, cement factories have improved by 70/80 times in comparison with pre liberation period. Ships are explored to European countries from Bangladesh. Bangladesh has become the role model for development in the world by alleviating poverty in the last decade. United Nations has awarded Bangladesh to graduate to developing country prior to its golden jubilee of independence. It has superseded many countries and human development.

Unforeseen development has achieved by the country in almost all indices of development in the last decade. According to international Monetary Fund (IMF) Bangladesh economy has won 30th position on the basis of PPP. Price water house cooper's projection indicates that, Bangladesh will occupy 23rd position in the world 2040. HSBC forecasts that Bangladesh will be 26th largest economy within 2030. This overall tremendous development is the result of the dreams of the father of the nation **Bangabondhu** Sheikh MujiburRahman and visionary leadership of honorable Prime Minister Sheikh Hasina.

Honorable Prime Minister's foresighted and dynamic leadership caused the formulation of vision 2021, 2041, 8th five year plan and delta plan. Second perspective plan (2021-2024) is going to be implemented at present.

Its main objective is removal of absolute, poverty within 2031 and to graduate to high middle income country.

This plan is adopted to abolish poverty within 2041 and to accelerate the country to high income developed country. Other than this, Bangladesh has taken many steps to make the women of Bangladesh economically independent. In accordance with this view 7th five year plan (2016-2021) has promised to ensure women empowerment.

8th five year plan targeted to achieve 8.51% GDP by 2024-25, Employment creation for 75 lac people, to reduce poverty rate by 15.6% and absolute poverty rate by 7.4%.

Many commitments are there to take programs to mitigate the effect of climate change and to adapt with its effects in reliance with Delta Plan 2100.

Above mentioned various plans, Programs and initiatives of the Government are closely related with the of Rubber garden and cultivation. Rubber based industry establishment also related with unused programs.

Bangladesh Rubber Board has started work with a view to add its contribution to the overall development of Bangladesh economy. Bangladesh Rubber Board is committed to protect ecological balance, face the risks of climate change, attainment of SDG'S women empowerment & the likes included in the national plan with almost sincerity, honesty and dedication.

All kinds of assistants provided by the secretary of ministry of environment, forest & climate change regarding this matter. Bangladesh Rubber Board is looking forward for the cooperation of all stakeholders and related body.